PRC Environmental Management Inc
233 North Michigan Avenue
Suite 1621
Chicago IL 60601
312 856 8700
Fax 312 938 0118

PRC

PRELIMINARY ASSESSMENT/ VISUAL SITE INSPECTION

JOHNSON CONTROLS BATTERY GROUP, INC (FORMERLY JOHNSON CONTROLS, INC GLOBE BATTERY DIVISION) GENEVA, ILLINOIS ILD 980 502 470

FINAL REPORT

Prepared for

U S ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, DC 20460

Work Assignment No	R05032
EPA Region	5
Site No	ILD 980 502 470
Date Prepared	March 31, 1994
Contract No	68-W9-0006
PRC No	309-R05032IL1L
Prepared by	PRC Environmental Management, Inc (Kurt Whitman)
Contractor Project Manager	Shin Ahn
Telephone No	(312) 856-8700
EPA Work Assignment Manager	Kevin Pierard
Telephone No	(312) 886-4448

CONTENTS

FIGURES

TABLES

EXECUTIVE SUMMARY

PRC Environmental Management, Inc (PRC), performed a preliminary assessment and visual site inspection (PA/VSI) to identify and assess the existence and likelihood of releases from the solid waste management units (SWMU) and other areas of concern (AOC) at the Johnson Controls Battery Group, Inc (Johnson) facility in Geneva, Kane County, Illinois This summary highlights the results of the PA/VSI and the potential for releases of hazardous wastes or hazardous constituents from SWMUs and AOCs identified

The facility was built by Globe Union, Inc (Globe), and began operating in 1961 In the 1970s, Johnson Controls, Inc (Johnson Controls) purchased the facility from Globe and changed the facility name to the Johnson Controls, Inc Globe Battery Division In the late 1980s, Johnson Controls changed the name of the facility to Johnson Controls Battery Group, Inc (Johnson) to limit liability Since 1961, Globe, Johnson Controls, and Johnson have conducted the same battery manufacturing operations The Johnson facility employs about 340 people

Since 1961, the facility has manufactured lead acid batteries, primarily for use in automobiles Molten lead from lead pots is mixed with air to produce lead oxide in the lead oxide mills The lead oxide is mixed with sulfuric acid and water to form a lead oxide paste The paste is pressed into grids and cured at a controlled humidity and temperature for 24 hours The paste grids are then stacked with alternating positive and negative plates, and an insulator is placed between each layer The formed positive and negative battery grids are then assembled using molten lead After assembly, the grids are placed in a polypropylene plastic casing, and the positive and negative posts are sealed with molten lead The batteries are then filled with sulfuric acid, sealed, and charged Some of the batteries are shipped out to customers without being filled

The following raw materials used by the facility (1) lead ingots (possibly containing antimony or calcium), (2) sulfuric acid, (3) acetic acid, (4) hydrobromic acid, (5) methylene chloride, (6) Cast-On-Strap (COS) flux, (7) 20 percent sodium hydroxide solution, (8) epoxy solution, (9) petroleum oils, (10) wastewater treatment polymers, (11) polypropylene casings, (12) polyester fiber, (13) ferrous sulfate, and (14) spent citrisolvent

The following processes generate waste at the facility (1) wastewater treatment, (2) degreasing, (3) laboratory testing, (4) battery production, (5) maintenance, (6) air pollution control, (7) lead ingot melting using a Barton pot, (8) lead paste wash water treatment, and (9) vehicle repair

Prior to 1992, the facility generated and managed the following waste streams (1) wastewater treatment plant (WWTP) sludge (D008), (2) WWTP filter cake (D008), and (3) waste naphtha solvent (D001) The Johnson facility currently generates and manages the following waste streams (1) spent carburetor cleaner (methylene chloride) (F001 and D008), (2) spent acetic acid (D002, D007, and D008), (3) spent sulfuric acid (D002 and D008), (4) Spent COS flux (hydrobromic acid) (D002, D004, D007, and D008), (5) spent hydrobromic acid and ethylene glycol (D002 and D008), (6) used oil (D008), (7) process wastewater (D002 and D008), (8) spent citrisolvent (nonhazardous), and (9) used oil (nonhazardous)

The facility also generates various lead-bearing wastes These lead-bearing wastes are recycled by sending them off site to several lead reclamation and smelting facilities The only exception was the WWTP sludge and WWTP filter cake, which were being sent to Envirite, Inc (Envirite), an off-site treatment facility until 1992 The WWTP sludge was not generated after 1991 The WWTP sludge was stored in a 5,000-gallon aboveground storage tank, which the facility decommissioned before 1992 By 1992, the facility was sending all lead-bearing materials, including the WWTP filter cake, to a lead reclamation facility All lead-bearing materials recycled by the facility are returned to them as lead ingots for reuse in their manufacturing process At the time of the VSI, the facility claimed that lead-bearing wastes sent off site for recycling and returned as lead ingots were not considered RCRA hazardous wastes Johnson could not provide documentation to support this claim The following lead-bearing wastes are generated and managed by the facility and sent off site for recycling (1) baghouse dust, (2) lead dross, (3) lead debris and floor sweepings, (4) lead paste wash water, (5) clean water treatment sludge, and (6) WWTP filter cake

On June 8, 1981, the facility sent a Notification of Hazardous Waste Site Activity form to the U S Environmental Protection Agency (EPA) that indicated documented releases of sulfuric acid and process wastewater All of these spills occurred before 1981 According to the information provided in this form, Johnson cleaned up all of these spills

In October 1993, the facility notified the State of Illinois Emergency Management Agency (IEMA) that two separate leaks of petroleum-based fuels had occurred from a 8,000-gallon underground storage tank (UST) used to store diesel fuel and a 550-gallon UST used to store gasoline

Johnson Controls submitted a Notification of Hazardous Waste Activity form to EPA on July 28 1980 Johnson Controls submitted a RCRA Part A permit application on November 19, 1980 stating that the facility was a large-quantity generator handling the following EPA hazardous waste codes D002 and D008 The permit application states that the facility has a 331,200-gallon tank storage capacity and a 150-gallon storage (S02) capacity The facility is currently regulated as a treatment, storage, or disposal (TSD) facility

IEPA inspected the facility on February 2, 1982 During this inspection, IEPA made a preliminary determination that the Johnson Controls facility did not fall under RCRA authority The basis for IEPA s determination was (1) that the hazardous waste codes D002 and D008 were listed on the facility s RCRA Part A permit application as a protective measure, possibly because of the potential for spills from the various manufacturing processes, (2) that all wastewater containing lead was being treated by the facility at the WWTP (SWMU 2), and (3) that the scrap lead and trash (D008) at the facility were potentially exempt under 40 CFR 261 6 and were being reclaimed by an off site smelting company On March 8, 1992, IEPA recommended that Johnson withdraw its RCRA Part A permit application

IEPA did not inspect the facility between 1982 and 1987 On March 11 and March 30, 1988, IEPA conducted two RCRA compliance inspections of the facility During these inspections, IEPA found that the facility was not labeling its hazardous containers, had inadequate personnel training records and had insufficient aisle space between its hazardous waste containers

The PA/VSI identified the following nine SWMUs and three AOCs at the facility

Solid Waste Management Units

1 Hazardous Waste Storage Area
2 Wastewater Treatment Plant (WWTP)
3 Baghouse Dust Collection Systems and Storage Areas
4 Drum Accumulation Areas
5 Clean Water Treatment System
6 Lead Scrap Storage Area
7 Lead Scrap Trailer Storage Area
8 Former Outside Hazardous Waste Storage Area
9 Used Oil Storage Area

Areas of Concern

1 Former Diesel Underground Storage Tank (UST)
2 Former Gasoline UST
3 Former Fuel Oil UST

The potential for release to groundwater, surface water, air, and on-site soils is low for SWMUs 1, 2, and 4 through 7 because the units are indoors and have adequate containment, there are concrete floors below the units, during the VSI, no evidence of release was noted, and no releases from these units have been documented

During the VSI, a documented release was observed to on-site soil adjacent to one SWMU 3 area, therefore this unit poses a high potential for release surface water, air, and on-site soils is high for SWMU 3 because the unit areas are outdoors, they are not adequately contained to prevent a release cracks in the concrete pad were visible, and during the VSI, one of the areas had visible signs of release The potential for release to groundwater is moderate for SWMU 3 because only the surface soil was found to have a documented release, the release covers only a small area (less than 25 square feet), and no known releases to groundwater have been documented

During the VSI, PRC observed evidence of a past release The potential for release to groundwater surface water, air, and on-site soils was moderate for SWMU 8 because the unit was outdoors, it consisted of an unsealed asphalt pad with no secondary containment and an unsealed gravel and dirt area is immediately west and adjacent to the unit, and a release from this unit was documented

The potential for release to groundwater, surface water, air, and on-site soils is moderate for SWMU 9 because the unit is outside, it has an unsealed concrete pad, it has no secondary containment to contain potential spills, and a gravel parking lot is immediately adjacent to the ASTs

The potential for release to groundwater, surface water, air, and on-site soils is unknown for AOCs 1 and 2 because the AOCs were outdoors and below ground, no soils were excavated when the USTs were removed, and known releases to on-site soils have occurred, however the level of petroleum-based contamination is unknown The potential for release to groundwater, surface water, air, and on site soils is unknown for AOC 3 because the AOC was outdoors and below ground, the AOC was not removed and according to facility representatives it was filled in with gravel, the level of contamination is unknown, and the location of the AOC is unknown

The facility is bordered on the north by E and T Glass and Mirror, Inc , a vacant lot, and Allied Tubular Rivet, Inc , all located on Commerce Drive, on the west by a residential subdivision, on the south by railroad tracks and Waste Management, Inc 's, Settler's Hill landfill, and on the east by Miner Enterprises, Inc , a railroad equipment manufacturer The nearest residential area is located less than 0 1 mile west of the facility The nearest school, Harrison Street School, is about 0 5 mile northwest of the facility Facility access is restricted by a barbed wire fence, which surrounds the facility

The nearest surface water body, an unnamed pond, is located on site and is used for recreational and industrial purposes Other surface water bodies in the area include the Fox River, which is about 0 8 mile west of the facility The Fox River is not used as a water supply for Geneva, Illinois

The facility area is serviced by municipal water drawn from six City of Geneva wells The closest municipal well is about 0 5 mile north of the facility The next closest city well is about 0 8 mile west-southwest of the facility Another well is about 1 2 miles southwest of the facility The three remaining municipal wells are about 1 1, 1 6, and 1 9 miles northwest of the facility, respectively All six municipal wells are upgradient of the facility Groundwater in the area generally moves to the southeast Geneva has no known private industrial or residential wells No downgradient wells are known to be located within 3 miles of the facility The Fox River is used as a municipal water supply for Aurora, Illinois Aurora's intakes are located about 13 miles downstream from Geneva

Sensitive environments are located on site east of the facility's manufacturing activities A palustrine, unconsolidated bottom, intermittently exposed wetland pond is located on site Other sensitive environments include various palustrine wetlands, which are from 0 1 mile to 2 0 miles east to southeast of the facility Additionally, one palustrine, forested and emergent wetland area is located on the Fox River and is about 1 6 miles southwest of the facility Fabyan Forest Preserve, a Kane County preserve, is about 0 9 mile south-southwest of the facility

PRC recommends no further action for SWMU 1 at this time For SWMU 3 PRC recommends that the facility should (1) take corrective measures to prevent the release of baghouse dust, (2) seal the concrete pads, (3) remove/remediate contaminated soil, and (4) conduct weekly inspections of each area For SWMU 5, PRC recommends that drums containing sludge be stored closed For SWMU 8, PRC recommends that this unit undergo RCRA closure For SWMU 9, PRC recommends that the facility construct a secondary containment berm around the unit to contain spills to comply with EPAs 40 Code of Federal Regulations Part 279 and the state of Illinois used oil management standards PRC also recommends the facility characterize the lead-containing wastes managed at SWMUs 2, 3 4, 5, 6, and 7 and sent off-site for reclamation

For AOCs 1 and 2, PRC recommends that the facility sample soils to delineate the current extent of contamination Based on the soil data, the analytical results may warrant the installation of groundwater monitoring wells upgradient and downgradient of the AOC PRC recommends that the facility determine the location of AOC 3 and collect on-site soil samples to determine if a release has occurred If soil contamination is detected, groundwater sampling may be warranted

1 0 INTRODUCTION

PRC Environmental Management, Inc (PRC), received Work Assignment No R05032 from the U S Environmental Protection Agency (EPA) under Contract No 68-W9-0006 (TES 9) to conduct preliminary assessments (PA) and visual site inspections (VSI) of hazardous waste treatment and storage facilities in Region 5

As part of the EPA Region 5 Environmental Priorities Initiative, the RCRA and CERCLA programs are working together to identify and address RCRA facilities that have a high priority for corrective action using applicable RCRA and CERCLA authorities The PA/VSI is the first step in the process of prioritizing facilities for corrective action Through the PA/VSI process, enough information is obtained to characterize a facility's actual or potential releases to the environment from solid waste management units (SWMU) and areas of concern (AOC)

A SWMU is defined as any discernible unit at a RCRA facility in which solid wastes have been placed and from which hazardous constituents might migrate, regardless of whether the unit was intended to manage solid or hazardous waste

The SWMU definition includes the following

- RCRA-regulated units, such as container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells
- Closed and abandoned units
- Recycling units, wastewater treatment units, and other units that EPA has usually exempted from standards applicable to hazardous waste management units
- Areas contaminated by routine and systematic releases of wastes or hazardous constituents Such areas might include a wood preservative drippage area, a loading or unloading area, or an area where solvent used to wash large parts has continually dripped onto soils

An AOC is defined as any area where a release of hazardous waste or constituents to the environment has occurred or is suspected to have occurred on a nonroutine and nonsystematic basis This includes any area where a strong possibility exists that such a release might occur in the future

The purpose of the PA is as follows

- Identify SWMUs and AOCs at the facility
- Obtain information on the operational history of the facility
- Obtain information on releases from any units at the facility
- Identify data gaps and other informational needs to be filled during the VSI

The PA generally includes review of all relevant documents and files located at state offices and at the EPA Region 5 office in Chicago

The purpose of the VSI is as follows

- Identify SWMUs and AOCs not discovered during the PA
- Identify releases not discovered during the PA
- Provide a specific description of the environmental setting
- Provide information on release pathways and the potential for releases to each medium
- Confirm information obtained during the PA regarding operations, SWMUs, AOCs, and releases

The VSI includes interviewing appropriate facility staff, inspecting the entire facility to identify all SWMUs and AOCs, photographing all visible SWMUs, identifying evidence of releases, making a preliminary selection of potential sampling parameters and locations, if needed, and obtaining additional information necessary to complete the PA/VSI report

This report documents the results of a PA/VSI of the Johnson Controls Battery Group, Inc (Johnson) facility (EPA Identification No ILD 980 502 470) in Geneva, Kane County, Illinois The PA was

completed on December 13, 1993 PRC gathered and reviewed information from the Illinois Environmental Protection Agency (IEPA), U S Department of Agriculture (USDA), U S Department of Commerce (USDOC), U S Geological Survey (USGS), Illinois State Geological Survey (ISGS), Federal Emergency Management Agency (FEMA), National Wetland Inventory (NWI), and from EPA Region 5 RCRA files The VSI was conducted on December 17, 1993 It included interviews with facility representatives and a walk-through inspection of the facility PRC identified nine SWMUs and three AOCs at the facility

The VSI is summarized and 15 inspection photographs are included in Appendix A Photograph No 9, the only photograph not associated with a SWMU or AOC, shows an area which the facility used to store empty drums Field notes from the VSI are included in Appendix B

2 0 FACILITY DESCRIPTION

This section describes the facility's location, past and present operations, waste generating processes and waste management practices, history of documented releases, regulatory history, environmental setting, and receptors

2 1 FACILITY LOCATION

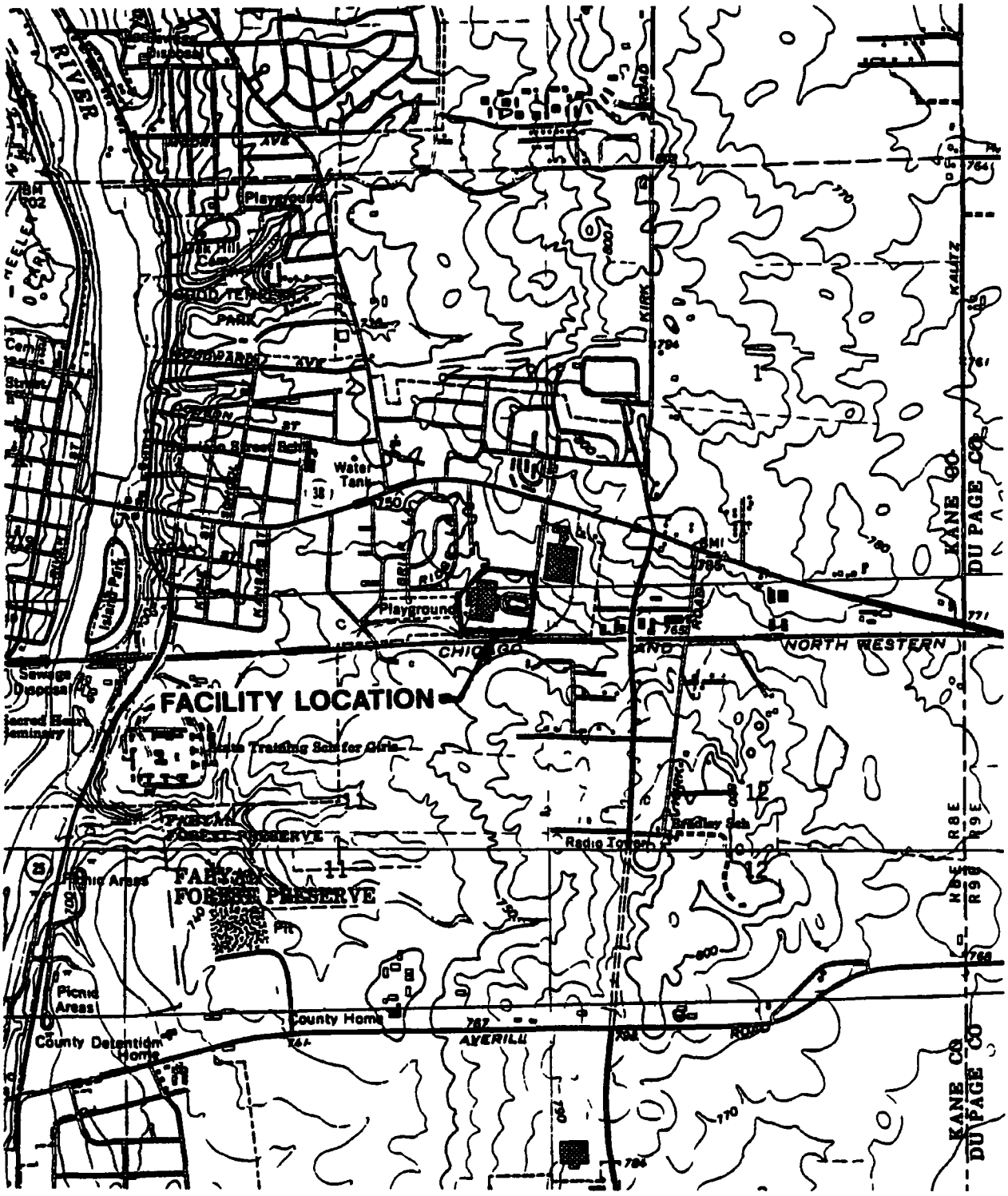
The Johnson facility is located at 300 South Glengarry Drive in Geneva, Kane County, Illinois Figure 1 shows the location of the facility in relation to the surrounding topographic features (latitude 41°53 40" N and longitude 88°17 40" W) (Johnson Controls 1980b) The facility occupies 16 5 acres in a mixed-use area

The facility is bordered on the north by E and T Glass and Mirror, Inc , a vacant lot, and Allied Tubular Rivet, Inc , all located on Commerce Drive, on the west by a residential subdivision, on the south by railroad tracks and Waste Management, Inc 's, Settler's Hill landfill, and on the east by Miner Enterprises, Inc , a railroad equipment manufacturer

2 2 FACILITY OPERATIONS

The facility was built by Globe Union, Inc (Globe), and began operating in 1961 In the 1970s, Johnson Controls purchased the facility from Globe and changed the facility name to the Johnson Controls, Inc Globe Battery Division In the late 1980s, Johnson Controls changed the name of the facility to Johnson Controls Battery Group, Inc (Johnson) to limit liability Since 1961, Globe Johnson Controls, and Johnson have conducted the same battery manufacturing operations at the facility The Johnson facility employs about 340 people

Since 1961, the facility has manufactured lead acid batteries, primarily for use in automobiles Molten lead from lead pots is mixed with air to produce lead oxide in the lead oxide mills The lead oxide is mixed with sulfuric acid and water to form a lead oxide paste The paste is pressed into grids and cured at a controlled humidity and temperature for 24 hours The paste grids are then stacked with alternating positive and negative plates, and an insulator is placed between each layer



SCALE 1 24000

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

SCALE 1"=2,000

QUADRANGLE LOCATION

SOURCE: MODIFIED FROM USGS, AURORA NORTH AND GENEVA QUADRANGLES, 1978 AND 1980

JOHNSON CONTROLS, INC BATTERY GROUP
GENEVA, ILLINOIS

FIGURE 1
FACILITY LOCATION

ENVIRONMENTAL MANAGEMENT INC.

The formed positive and negative battery grids are then assembled using molten lead After assembly, the grids are placed in a polypropylene plastic casing, and the positive and negative posts are sealed with molten lead The batteries are then filled with sulfuric acid, sealed, and charged Some of the batteries are shipped out to customers without being filled (IEPA 1992a)

The following raw materials are used by the facility (1) lead ingots (possibly containing antimony or calcium), (2) sulfuric acid, (3) acetic acid, (4) hydrobromic acid, (5) methylene chloride, (6) Cast-On-Strap (COS) flux, (7) 20 percent sodium hydroxide solution, (8) epoxy solution, (9) petroleum oils, (10) wastewater treatment polymers, (11) polypropylene casings, (12) polyester fiber, (13) ferrous sulfate, and (14) spent citrisolvent

Solid wastes generated by facility operations and the SWMUs where they are managed are discussed in detail in Section 2 3

2.3 WASTE GENERATION AND MANAGEMENT

Facility generation and management of both hazardous and nonhazardous wastes are discussed below Wastes have been generated and managed at various locations at the facility The facility's SWMUs and their current status are identified in Table 1 The locations of the facility's SWMUs and the facility layout are shown in Figure 2 Wastes generated at the facility are summarized in Table 2 The annual waste generation data presented in this section is based on data for 1990, 1991, and 1992

The following processes generate waste at the facility (1) wastewater treatment, (2) degreasing, (3) laboratory testing, (4) battery production, (5) maintenance, (6) air pollution control, (7) lead ingot melting using a Barton pot, and (8) vehicle repair

Prior to 1992, the facility generated and managed the following waste streams (1) wastewater treatment plant (WWTP) sludge (D008), (2) WWTP filter cake (D008), and (3) waste naphtha solvent (D001) The facility stopped managing the WWTP sludge (D008) as a hazardous waste at the end of 1991 when they began to send the waste to a reclamation facility In 1991, the waste naphtha solvent's use was discontinued The Johnson facility currently generates and manages the following waste streams (1) spent carburetor cleaner (methylene chloride) (F001 and D008), (2) spent acetic

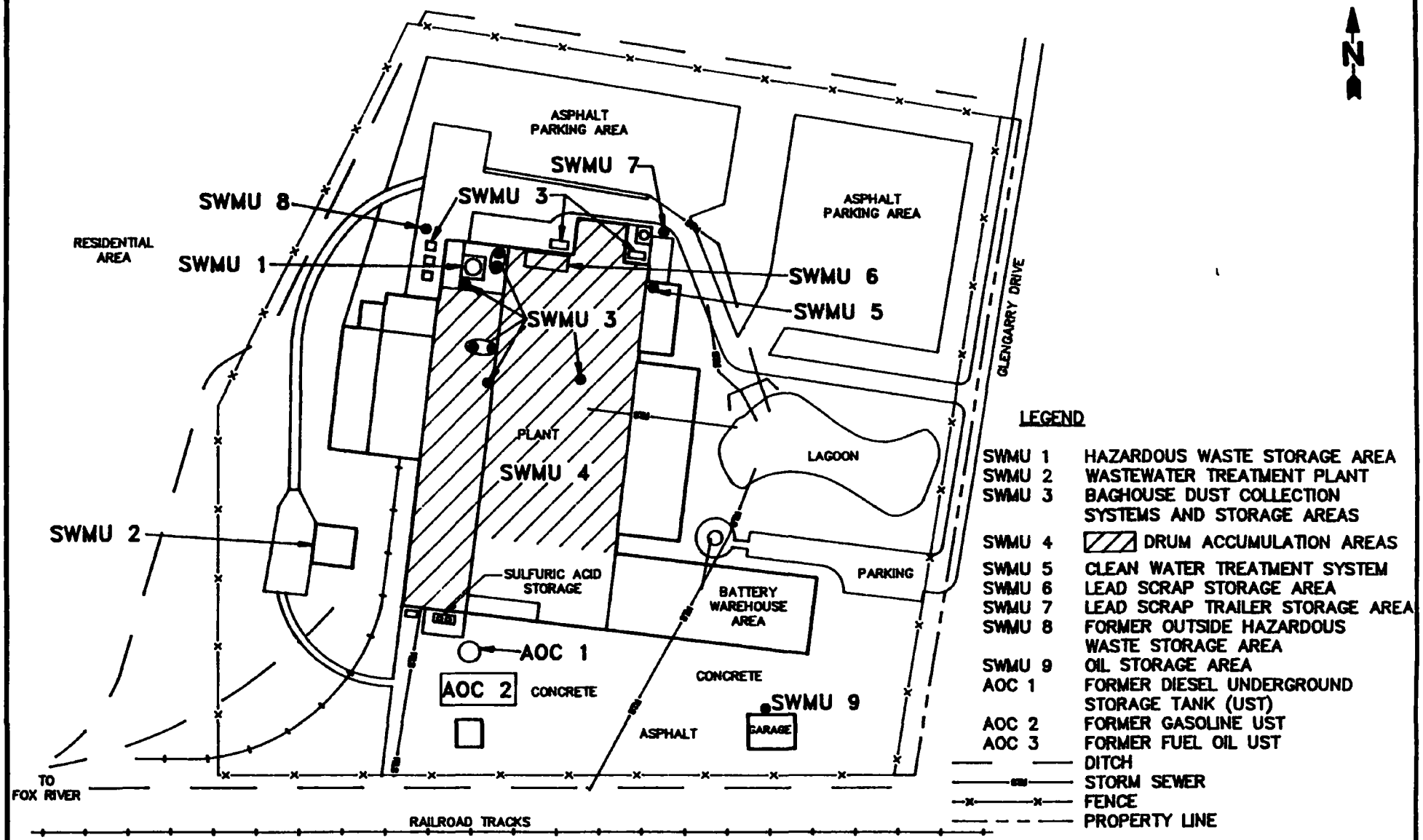
TABLE 1

SOLID WASTE MANAGEMENT UNITS

SWMU Number	SWMU Name	RCRA Hazardous Waste Management Unit[a]	Status
1	Hazardous Waste Storage Area	Yes	Active, greater than 90-day storage of hazardous wastes
2	Wastewater Treatment Plant (WWTP)	Yes	Active, wastewater treatment
3	Baghouse Dust Collection Systems and Storage Areas	No	Active, less than 90-day storage of lead-bearing material for reclamation
4	Drum Accumulation Areas	No	Active, accumulation of hazardous and lead-bearing material for reclamation
5	Clean Water Treatment System	No	Active, treatment of lead bearing waste
6	Lead Scrap Storage Area	No	Active, less than 90-day storage of lead-bearing material for reclamation
7	Lead Scrap Trailer Storage Area	No	Active, less than 90-day storage of lead-bearing material for reclamation
8	Former Outside Hazardous Waste Storage Area	Yes	Inactive, facility discontinued use in October 1993
9	Used Oil Storage Area	No	Active, storage of nonhazardous used oil

Note

[a] A RCRA hazardous waste management unit is one that currently requires or formerly required submittal of a RCRA Part A or Part B permit application



LEGEND

SWMU 1	HAZARDOUS WASTE STORAGE AREA
SWMU 2	WASTEWATER TREATMENT PLANT
SWMU 3	BAGHOUSE DUST COLLECTION SYSTEMS AND STORAGE AREAS
SWMU 4	DRUM ACCUMULATION AREAS
SWMU 5	CLEAN WATER TREATMENT SYSTEM
SWMU 6	LEAD SCRAP STORAGE AREA
SWMU 7	LEAD SCRAP TRAILER STORAGE AREA
SWMU 8	FORMER OUTSIDE HAZARDOUS WASTE STORAGE AREA
SWMU 9	OIL STORAGE AREA
AOC 1	FORMER DIESEL UNDERGROUND STORAGE TANK (UST)
AOC 2	FORMER GASOLINE UST
AOC 3	FORMER FUEL OIL UST

DITCH
STORM SEWER
FENCE
PROPERTY LINE

NOTES.

THE LOCATION OF AOC 3 IS UNKNOWN

ABOUT 75 LOCATIONS OF SWMU 4 ARE PRESENT AT THE FACILITY

60' 0 60' 180'
SCALE. 1" = 180

SOURCE. MODIFIED FROM BAXTER AND WOODMAN 1993

JOHNSON CONTROLS INC BATTERY GROUP
GENEVA, ILLINOIS

FIGURE 2
FACILITY LAYOUT

PRC ENVIRONMENTAL MANAGEMENT INC.

TABLE 2

SOLID WASTES

Waste/EPA Waste Code[a]	Source	Solid Waste Management Unit[b]
Former Wastes		
Wastewater treatment plant (WWTP) sludge/D008[c]	Wastewater treatment	2
WWTP filter cake/D008[c]	Wastewater treatment	2
Waste naphtha solvent/D001[c]	Degreasing	8
Current Wastes		
Spent carburetor cleaner (methylene chloride)/F001 and D008	Degreasing	1 or 8
Spent acetic acid/D002, D007, and D008	Laboratory testing	1 or 8
Spent sulfuric acid/D002 and D008	Battery production	2
Spent COS flux (hydrobromic acid)/D002, D004, D007, and D008	Battery production	1 or 8
Spent hydrobromic acid and ethylene glycol/D002 and D008	Battery production	1
Used oil/D008	Maintenance	1 or 8
Process wastewater/D002 and D008	Battery production	2
Baghouse dust/Not characterized[d]	Air pollution control	3, 6, and 7
Lead dross/Not characterized[d]	Barton melting pot	4, 6, and 7
Lead debris and floor sweepings/Not characterized[d]	Battery production	4, 6, and 7
Lead paste wash water/Not characterized[d]	Battery production	5

TABLE 2 (Continued)

SOLID WASTES

Waste/EPA Waste Code[a]	Source	Solid Waste Management Unit[b]
Clean water treatment sludge/ Not characterized[d]	Battery production	5, 6, and 7
WWTP filter cake/NA[e]	Wastewater treatment	2, 6, and 7
Spent citrisolvent/NA	Degreasing	None, removed and managed by a recycling company
Used oil/NA	Vehicle repair	9

Notes

[a] Not applicable (NA) designates nonhazardous waste

[b] "None" indicates that the waste is not managed on site

[c] Until 1991 this waste stream was managed as a hazardous waste exhibiting the D008 characteristic

[d] At the time of the VSI, the facility claimed that lead-bearing wastes sent off site for recycling and returned as lead ingots were not considered RCRA hazardous wastes

[e] This waste stream was previously managed as a hazardous waste exhibiting the D008 characteristic Since 1992, this waste has been reclaimed off site and the facility has claimed that it can be managed as a non-hazardous waste

acid (D002, D007, and D008), (3) spent sulfuric acid (D002 and D008), (4) spent COS flux (hydrobromic acid) (D002, D004, D007, and D008), (5) spent hydrobromic acid and ethylene glycol (D002 and D008), (6) used oil (D008), (7) process wastewater (D002 and D008), (8) spent citrisolvent (nonhazardous), and (9) used oil (nonhazardous)

The facility also generates various lead-bearing wastes which have been recycled since the facility started operations At the time of the VSI, the facility claimed that lead-bearing wastes sent off site for recycling and returned as lead ingots were not considered RCRA hazardous wastes These lead-bearing wastes were recycled by sending them off site to several lead reclamation and smelting facilities

The only exception was the WWTP sludge (D008) and the WWTP filter cake (D008), which were being sent to Envirite, Inc (Envirite), an off-site treatment facility until 1992 By 1992, the facility had discontinued the generation of the WWTP sludge (D008) The WWTP sludge, which was stored in a 5,000-gallon aboveground storage tank (AST) at the WWTP, was removed, shipped to Envirite for treatment, and the AST was inactivated by the facility By 1992, the facility was sending all lead-bearing wastes, including the WWTP filter cake, to a lead reclamation facility At the time of the VSI, the following lead-bearing wastes were generated and managed by the facility (1) baghouse dust, (2) lead dross, (3) lead debris and floor sweepings, (4) lead paste wash water, (5) clean water treatment sludge, and (6) WWTP filter cake

Prior to 1992, about 40,000 gallons of WWTP sludge (D008) and WWTP filter cake (D008) were generated per year This waste was generated during the treatment and neutralization of process wastewater (D002 and D008) This WWTP sludge was stored in a 5,000-gallon aboveground storage tank (AST) at the WWTP (SWMU 2) The WWTP filter cake was stored in drums at the WWTP (SWMU 2) Both wastes were transported off site by Envirite to their treatment facility in Harvey, Illinois

Before 1992, the facility also generated about 50 gallons of waste naphtha solvent (D001) per year until the facility replaced their degreaser with less hazardous materials This waste was generated during the degreasing of machinery and equipment This waste was stored in drums at the Former Outside Hazardous Waste Storage Area (SWMU 8) until being shipped off site by an unknown

transporter to an unknown disposal facility No data exists in EPA, State, or facility files on the transportation and disposal of this waste

Currently, the facility generates about 500 gallons of spent carburetor cleaner (methylene chloride) (F001 and D008) This waste is generated from the degreasing of machinery and equipment, and is stored in drums at the Hazardous Waste Storage Area (SWMU 1) Before October 1993, the cleaner was stored at the Former Outside Hazardous Waste Storage Area (SWMU 8) This waste has always been transported off site by Clean Harbors, Inc (Clean Harbors), to their treatment facility in Chicago, Illinois

The facility generates about 50 gallons of spent acetic acid (D002, D007, and D008) per year This waste is generated during the laboratory testing of lead-acid batteries, and is stored in drums at the Hazardous Waste Storage Area (SWMU 1) Before October 1993, the acid was stored at the Former Hazardous Waste Storage Area (SWMU 8) until being shipped off site by Clean Harbors to their treatment facility in Chicago, Illinois

The facility generates an unknown quantity of spent sulfuric acid (D002 and D008) This waste is generated during the production of lead-acid batteries and is treated on site at the WWTP (SWMU 2) This waste is not shipped off site for disposal or treatment

The facility generates about 1,200 gallons of spent COS flux (hydrobromic acid) (D002, D004, D007, and D008) per year This waste is generated during the etching of lead-acid battery plates, and is stored in drums at the Hazardous Waste Storage Area (SWMU 1) Before October 1993, the spent COS flux was stored in drums at the Former Hazardous Waste Storage Area (SWMU 8) This flux is transported off site by Clean Harbors to their facility in Chicago, Illinois

The facility generated about 55 gallons of spent hydrobromic acid and ethylene glycol (D002 and D008) on a one-time basis when the hydrobromic acid was accidentally contaminated with the glycol This waste is stored in one drum at the Hazardous Waste Storage Area (SWMU 1) until being transported off site by Clean Harbors to their Chicago, Illinois facility

The facility generates about 200 to 400 gallons of used oil (D008) per year This waste is generated from the maintenance and draining of machinery, and is stored in drums at the Hazardous Waste Storage Area (SWMU 1) Before October 1993, the used oil was stored in drums at the Former Hazardous Waste Storage Area (SWMU 8) This used oil is transported off site by Clean Harbors to their Chicago, Illinois facility

The facility generates about 15,000 gallons of process wastewater (D002 and D008) per day This waste is generated during the production of lead-acid batteries and is treated and neutralized in bulk at the WWTP (SWMU 2)

The facility generates several lead-bearing waste streams that are sent off site for recycling At the time of the VSI, the facility claimed that lead-bearing wastes sent off site for recycling and returned as lead ingots were not considered RCRA hazardous wastes Johnson could not provide documentation to support this claim Baghouse dust is generated by the air pollution control dust collectors and is stored in drums at the Baghouse Dust Collection Systems and Storage Areas (SWMU 3), the Lead Scrap Storage (SWMU 6), and the Lead Scrap Trailer Area (SWMU 7) Lead dross is generated when molten lead impurities that are floating on top of the Barton melting pot are skimmed This waste is stored at the Drum Accumulation Areas (SWMU 4), the Lead Scrap Storage Area (SWMU 6), and the Lead Scrap Trailer Storage Area (SWMU 7) Lead debris and floor sweepings are generated during the production of lead-acid batteries and are accumulated and stored in drums at the Drum Accumulation Areas (SWMU 4), the Lead Scrap Storage Area (SWMU 6), and the Lead Scrap Trailer Storage Area (SWMU 7) Lead paste wash water is generated from the production of grids at the high speed lead pasting operation and is treated in bulk at the Clean Water Treatment System (SWMU 5) Generation rates of these wastes are unknown

Clean water treatment sludge is generated during the treatment of lead paste wash water at the Clean Water Treatment System (SWMU 5) This waste is stored in drums at the Lead Scrap Storage Area (SWMU 6) and the Lead Scrap Trailer Storage Area (SWMU 7) WWTP filter cake is generated during the treatment of process wastewater and is stored in drums at the WWTP (SWMU 2), the Lead Scrap Storage Area (SWMU 6), and the Lead Scrap Trailer Storage Area (SWMU 7) In 1992, about 665,500 pounds of lead-bearing waste was reclaimed at the following lead smelting operations (1) Doe Run, Inc , in Boss, Missouri, (2) Gopher Smelting, Inc , in Egan, Minnesota, and (3) RSR, Inc ,

in Indianapolis, Indiana All lead bearing waste is transported off site by Parrish Carriers, Inc , of Freeburg, Illinois (Johnson 1994)

The facility generates about 50 gallons of spent citrisolvent (nonhazardous) per year This waste is generated during the degreasing of machinery and equipment and is managed by an outside, unspecified recycling company This waste is accumulated but not stored at the facility

Used oil (nonhazardous), about 200 to 400 gallons per year, is generated from the vehicle repair and draining of used oil from truck engines and is stored at the Used Oil Storage Area (SWMU 9) This waste is transported off site by Texama, Inc , to their recycling facility in Chicago, Illinois

2 4 HISTORY OF DOCUMENTED RELEASES

This section discusses the history of documented releases to groundwater, surface water, air, and on-site soils at the facility

On June 8, 1981, the facility sent a Notification of Hazardous Waste Site Activity form to EPA that indicated documented releases of sulfuric acid and process wastewater All of these spills occurred before 1981 According to the information provided in this form, Johnson cleaned up all of these spills (Johnson Controls 1981)

In October 1993, the facility notified the State of Illinois Emergency Management Agency (IEMA) that two separate leaks of petroleum-based fuels had occurred from an 8,000-gallon underground storage tank (UST) used to store diesel fuel and a 550-gallon UST used to store gasoline (Johnson 1993a) Both USTs have been removed by the facility, however, no further action has occurred to investigate the extent of contamination or if contaminated, remediate the surrounding groundwater and on-site soils The two UST releases are discussed in detail in Section 4 0

During the VSI, the inspection team noted a release of baghouse dust to on-site soils adjacent to one Baghouse Dust Collection Systems and Storage Area (SWMU 3) Additionally, evidence of a past release was noted at the Former Outside Hazardous Waste Storage Area (SWMU 8) The facility representatives could not provide any additional information on the past release at SWMU 8

2 5 REGULATORY HISTORY

Johnson Controls submitted a Notification of Hazardous Waste Activity form to EPA on July 28 1980 (Johnson Controls 1980a) Johnson Controls submitted a RCRA Part A permit application on November 19, 1980, stating that the facility was a large-quantity generator handling the following EPA hazardous waste codes D002 and D008 The permit application states that the facility has a 331,200-gallon tank storage capacity and a 150-gallon storage (S02) capacity (Johnson Controls 1980b)

IEPA inspected the facility on February 2, 1982 During this inspection, IEPA made a preliminary determination that the facility did not fall under RCRA authority The basis for IEPA's determination was (1) that the hazardous waste codes D002 and D008 were listed on Johnson's RCRA Part A permit application as a protective measure, possibly because of the potential for spills from the various manufacturing processes, (2) that all wastewater containing lead was being treated by the facility at the WWTP (SWMU 2), and (3) that the scrap lead and trash (D008) at the facility were potentially exempt under 40 CFR 261 6 and were being reclaimed by an off-site smelting company On March 8, 1982, IEPA recommended that Johnson withdraw its RCRA Part A permit application (IEPA 1982)

IEPA did not inspect the facility between 1982 and 1987 On March 11 and March 30, 1988, IEPA conducted two RCRA compliance inspections of the facility During these inspections, IEPA found that the facility was not labeling its hazardous containers, had inadequate personnel training records, and had insufficient aisle space between its hazardous waste containers (IEPA 1988)

On May 2, 1988, the facility submitted a request to IEPA that they consider the withdrawal of their RCRA Part A permit application On July 1, 1991, IEPA responded to this request by denying Johnson's withdrawal request because the facility stored hazardous wastes in containers and tanks on site for periods greater than 90 days Furthermore, IEPA determined that the facility was operating as a RCRA interim status storage facility IEPA's denial was based on the review of hazardous waste manifests submitted to IEPA from 1985 through 1988 (IEPA 1991) Since 1988, IEPA has not conducted any RCRA inspections at the facility

On November 16, 1993, the facility's environmental consultant, Baxter and Woodman, Inc (Baxter and Woodman), submitted a closure plan for the 5,000-gallon WWTP (SWMU 2) sludge AST, which stored hazardous waste greater than 90 days (Baxter and Woodman 1993) IEPA has not responded to this request This tank was removed by the facility in 1989 The facility has not requested the closure of the remaining SWMUs The facility is currently regulated as a treatment, storage, or disposal (TSD) facility

On February 28, 1992, IEPA reissued a permit to Johnson for operation of the facility s WWTP (SWMU 3) system The permit number is 1990-EN-4863-2 The wastewater generated by this system is discharged to the City of Geneva's sewer system (IEPA 1992b)

The facility has one air operating permit for the operation of lead oxide baghouses and other air emission sources These emission sources are permitted under Permit No 089035AAF The facility has no known air permit violations The facility has no history of odor complaints or dust emissions from area residents

2 6 ENVIRONMENTAL SETTING

This section describes the climate, flood plain and surface water, geology and soils, and groundwater in the vicinity of the facility

2 6 1 Climate

The climate in Kane County is continental The average daily temperature is 48 9 degrees Fahrenheit (°F) The lowest average daily temperature is 29 7 °F in January The highest average daily temperature is 84 1 °F in July (USDA 1979)

The total annual precipitation for the county is 34 7 inches The mean annual lake evaporation for the area is about 30 inches (USDOC 1968) The 1-year, 24-hour maximum rainfall is about 2 5 inches (USDOC 1963) The prevailing wind is from the west Average wind speed is highest in March at 12 miles per hour (USDA 1979)

2 6 2 Flood Plain and Surface Water

The facility is not located in a 100- or 500-year flood plain or flood-prone area (FEMA 1981) The nearest surface water body, an unnamed pond, is located at the facility and is used for recreational and industrial purposes The Fox River is located about 0 8 mile west of the facility Surface water runoff at the facility flows south-southwest into the Fox River The Fox River is used as a municipal water supply for Aurora, Illinois Aurora's intakes are located about 13 miles downstream from Geneva (PRC 1993, USGS 1978, USGS 1980)

2 6 3 Geology and Soils

The surface soils around the facility are classified by the USDA as Milford silty clay loam The surficial soil ranges in depth from 36 to 60 inches below ground surface (bgs) (USDA 1979)

Pleistocene glacial till underlies surficial soils The till consists of layers of silt and sand to gravel The glacial till is about 60 feet thick in the facility vicinity Silurian system dolomites underlie the till and are about 150 feet thick Ordovician-age formations underlie the dolomite The uppermost Ordovician-age formation is the Maquoketa Group shale and dolomite, a continuing group that is about 95 feet thick The Galena-Platteville Dolomite Groups underlie the Maquoketa Group and are about 335 feet thick The Ancell Group, consisting of Glenwood and St Peter sandstones, underlies the Galena-Platteville Dolomite Groups The Ancell Group is about 475 feet thick Five Cambrian-age sandstone formations, up to about 1,200 feet thick, underlie the Ancell Group The sandstones are primarily dolomite, with some shale, and are underlain by Precambrian-age crystalline rocks (Waller and Sanderson 1978, USGS 1985)

2 6 4 Groundwater

Groundwater in the county is derived from four sources (1) the shallow sand and gravel aquifer, (2) the Upper Bedrock Aquigroup, (3) the Midwest Aquigroup, and (4) the Basal Bedrock Aquigroup The shallow sand and gravel aquifer of the glacial drift extends to about 60 feet bgs and can sustain some development of wells requiring about 100 to 500 gallons per minute (gpm) (ISGS 1966)

The Upper Bedrock Aquigroup is encountered at about 60 feet bgs and extends about 210 feet bgs (Waller and Sanderson 1978) This aquifer system consists of Silurian-age dolomite and shale and may yield up to 1,000 gpm, but yields are inconsistent because of cracks and fractures in the dolomites and shale In some areas, a free exchange of water exists between the Upper Bedrock Aquigroup and the glacial drift above it (USGS 1985) Generally, this aquifer is highly fractured and transmissivity is highly variable, ranging from 10,500 gallons per day per foot (gpd/ft) to 85 400 gpd/ft (Visocky, Sherrill, and Cartwright 1985)

The Maquoketa shales act as a partial barrier to downward water movement, however, the Upper Bedrock Aquigroup shows some appreciable downward leakage to the deep bedrock system through the Maquoketa shales The average vertical permeability of the Maquoketa shales is 5×10^{-5} gpd/square foot These shales yield little or no water and are not considered a source for large water supplies (USGS 1985)

The Midwest Aquigroup consists of Cambrian and Ordovician-age dolomite and sandstone groups interbedded with some shale This aquifer system is encountered at about 210 feet bgs and extends to about 1,100 feet bgs (Waller and Sanderson 1978) Wells in this aquifer system yield about 700 gpm Regional transmissivity values generally range between 10,000 gpd/ft and 20,000 gpd/ft (USGS 1985)

The Basal Bedrock Aquigroup is a Cambrian-age aquifer system consisting of shale, siltstone, and sandstone This aquigroup underlies the Midwest Aquigroup and extends from about 1,100 feet bgs to about 2 200 feet bgs (Waller and Sanderson 1978) Transmissivity values range between 23,300 to 27,000 gpd/ft (USGS 1985)

The facility area is serviced by municipal water drawn from six City of Geneva wells The closest municipal well is about 0 5 mile north of the facility The next closest city well is about 0 8 mile west-southwest of the facility Another well is about 1 2 miles southwest of the facility The three remaining municipal wells are about 1 1, 1 6, and 1 9 miles northwest of the facility All six municipal wells are upgradient of the facility Five of the city wells draw water from the Midwest Aquigroup, which is about 1,100 feet bgs The sixth city well draws water from the sand and gravel aquifer (PRC 1993) Groundwater in the area generally moves to the southeast (USGS 1985)

Geneva has no known private, industrial or residential wells (PRC 1993) No downgradient wells are known to be located within 3 miles of the facility

2 7 RECEPTORS

The facility occupies 16 5 acres in a mixed-use area in Geneva, Illinois Geneva has a population of about 12,700 (Rand McNally and Company 1993)

The facility is bordered on the north by E and T Glass and Mirror, Inc , a vacant lot, and Allied Tubular Rivet, Inc , all located on Commerce Drive, on the west by a residential subdivision, on the south by railroad tracks and Waste Management, Inc s, Settler s Hill landfill, and on the east by Miner Enterprises, Inc , a railroad equipment manufacturer The nearest residential area is located less than 0 1 mile west of the facility The nearest school, Harrison Street School, is about 0 5 mile northwest of the facility Facility access is restricted by a barbed wire fence, which surrounds the facility

The nearest surface water body, an unnamed pond, is located on site at the facility and is used for recreational and industrial purposes Other surface water bodies in the area include the Fox River which is about 0 8 mile west of the facility The Fox River is used as a water supply for Aurora Illinois Aurora's intakes are located about 13 miles downstream from Geneva

The facility area is serviced by municipal water drawn from six City of Geneva wells The closest municipal well is about 0 5 mile north of the facility The next closest city well is about 0 8 mile west-southwest of the facility Another well is about 1 2 miles southwest of the facility The three remaining municipal wells are about 1 1, 1 6, and 1 9 miles northwest of the facility All six wells are upgradient of the facility Groundwater in the area generally moves to the southeast (USGS 1985) Geneva has no known private industrial or residential wells (PRC 1993) No downgradient wells are known to be located within 3 0 miles of the facility

Sensitive environments are located both on site and east of the facility's manufacturing activities A palustrine, unconsolidated bottom, intermittently exposed wetland pond is located on site Other sensitive environments include various palustrine wetlands, which are from 0 1 mile to 2 0 miles east

to southeast of the facility Additionally, one palustrine, forested and emergent wetland area is located on the Fox River and is about 1 6 miles southwest of the facility (NWI 1984) Fabyan Forest Preserve a Kane County preserve, is about 0 9 mile south-southwest of the facility

3 0 SOLID WASTE MANAGEMENT UNITS

This section describes the nine SWMUs identified during the PA/VSI The following information is presented for each SWMU description of the unit, dates of operation, wastes managed, release controls history of documented releases, and PRC's observations Figure 2 shows the SWMU locations

SWMU 1	**Hazardous Waste Storage Area**
Unit Description	This unit is located indoors and aboveground The unit covers an area of about 15 by 25 feet The unit consists of an epoxy-sealed concrete floor No floor drains are present This unit manages wastes in drums stored on top of wooden pallets
Date of Startup	This unit began operation in October 1993
Date of Closure	This unit is active
Wastes Managed	The unit manages spent carburetor cleaner (F001 and D008), spent acetic acid (D002, D007, and D008), spent COS flux (D002, D004, D007, and D008), spent hydrobromic acid and ethylene glycol (D002 and D008), and used oil (D008) All waste stored at this unit is stored in drums
Release Controls	The unit's only release control is an epoxy-sealed concrete floor The unit is indoors and no floor drains are located in the area
History of Documented Releases	No releases from this unit have been documented

Observations	During the VSI, the unit contained three 55-gallon drums of spent acetic acid (D002, D007, and D008), one 55-gallon drum of spent COS flux (D002, D004, D007, and D008), one 55-gallon drum of spent carburetor cleaner (F001 and D008), two 55-gallon drums of used oil (D008), one 30-gallon drum of spent carburetor cleaner (F001 and D008), and one 55-gallon drum of spent hydrobromic acid solution and ethylene glycol (D002 and D008) All drums were closed with no visible leaks or cracks No cracks were present on the unit s concrete floor PRC noted no evidence of release (see Photograph No 4)
SWMU 2	**Wastewater Treatment Plant (WWTP)**
Unit Description	This unit is located indoors and aboveground The unit covers an area of about 60 by 60 feet The unit consists of an epoxy-sealed concrete floor, wastewater sump collection pit, neutralization tank, eight fiberglass tanks of sulfuric acid, settling tank clarifier, switch controls sludge press and conveyor, two drums of WWTP sludge, and an open, grated trough that leads to the sump pit A former 5 000 gallon AST, which was removed in 1989, was used to dewater and store WWTP sludge (D008)
Date of Startup	This unit began operation in 1977
Date of Closure	This unit is active The former 5,000-gallon AST was removed in 1989 and is undergoing RCRA closure The AST closure plan was submitted by the facility to IEPA in November 1993
Wastes Managed	This unit has always treated and managed, in bulk, spent sulfuric acid (D002 and D008), and process wastewater (D002 and D008) Prior to 1992, this unit managed the WWTP sludge and the WWTP filter cake as D008 hazardous wastes The generation of the WWTP sludge

(D008) was discontinued by the facility at the end of 1991 when the 5,000-gallon aboveground storage tank used to store the sludge was deactivated After 1991, the facility stopped managing the filter cake as a RCRA hazardous waste because the waste was sent off site to a recycling facility for recovery At the time of the VSI, the facility claimed that lead-bearing wastes sent off site for recycling and returned as lead ingots were not considered RCRA hazardous wastes Johnson could not provide documentation to support this claim

Release Controls

The unit's release controls include an epoxy-sealed concrete floor, concrete masonry walls, enclosed roof, sump collection area, and constant effluent monitoring before discharge to the City of Geneva s sanitary sewer system

History of Documented Releases

No releases from this unit have been documented

Observations

During the VSI, facility process wastewater (D002 and D008), which was pumped from the sump pit, was being treated at the WWTP Two drums of WWTP filter cake were present No cracks, stains, or floor drains were present on the concrete floor PRC noted no evidence of release (see Photograph No 11)

SWMU 3

Baghouse Dust Collection Systems and Storage Areas

Unit Description

The areas associated with this unit are located throughout the facility at outdoors and indoors locations All units are aboveground They vary in size from 6 by 6 feet to 50 by 10 feet A total of about 11 baghouse dust units are located throughout the manufacturing area of the facility The dust is collected in the baghouse by vacuum pressure and then is collected using gravity at the bottom of each unit Each unit consists of an unsealed concrete pad below each baghouse

	collection system, metal and cloth collection systems, and a 30 gallon metal drum which is sealed to the individual baghouse and is situated directly below each baghouse dust collection system
Date of Startup	This unit began operation in about 1961
Date of Closure	This unit is active
Wastes Managed	This unit has always managed baghouse dust At the time of the VSI the facility claimed that lead bearing baghouse dust sent off site for recycling and returned as lead ingots were not considered RCRA hazardous wastes Johnson could not provide documentation to support this claim
Release Controls	The only release control associated with this unit is an unsealed concrete pad
History of Documented Releases	No releases from this unit have been documented
Observations	During the VSI, a documented release of baghouse dust to on site soil adjacent to one of the unit areas was observed PRC noted that the size of the release was about 4 by 5 feet The drums in this unit were not labeled by the facility Cracks were observed on the concrete pad (see Photograph No 8)
SWMU 4	**Drum Accumulation Areas**
Unit Description	The areas associated with this unit are located indoors and aboveground About 75 Drum Accumulation Areas are present at the facility One or two drums of lead dross and lead debris and floor sweepings are accumulating at each area Each area typically covers

	an area of 4 by 4 feet, however, the exact dimensions of all the areas are unknown
Date of Startup	This unit began operation in about 1980
Date of Closure	The unit areas are active
Wastes Managed	The unit has always managed lead dross and lead debris and floor sweepings The lead dross and the lead debris and floor sweepings have always been recycled
Release Controls	The units only release control is a sealed concrete floor
History of Documented Releases	No release from this unit has been documented
Observations	During the VSI, each unit contained one to three sealed drums of lead dross or lead debris and floor sweepings No cracks or floor drains were observed on the concrete floor The drums in this unit were not labeled by the facility PRC noted no evidence of release at any of the areas associated with this unit (see Photographs No 1, 2, and 5)
SWMU 5	**Clean Water Treatment System**
Unit Description	The unit is located indoors and aboveground The unit covers an area of about 25 by 40 feet This unit treats the lead paste wash water from the facility's high speed grid lead pasting operation, which is adjacent to this unit This unit uses polymers, a mixing tank a sludge press, and a settler/clarifier to remove lead from the lead paste wash water The treated water is then recycled back through the lead pasting operation or discharged to the WWTP (SWMU 2) The

	sludge press produces a clean water treatment sludge, which is stored in drums at this unit
Date of Startup	This unit began operation in about 1980
Date of Closure	This unit is active
Wastes Managed	This unit has always treated lead paste wash water from the high speed lead pasting operation and has always managed clean water treatment sludge
Release Controls	The unit has an epoxy-sealed concrete floor with a 4-inch concrete secondary containment berm surrounding the unit
History of Documented Releases	No releases from this unit have been documented
Observations	During the VSI, the unit contained two open-top 55-gallon drums of clean water treatment sludge and the treatment system was in operation The drums in this unit were not labeled by the facility A gray stain covered various areas and equipment within the unit No cracks or floor drains were observed on the concrete floor (see Photograph No 6)
SWMU 6	**Lead Scrap Storage Area**
Unit Description	The unit is located indoors and aboveground The unit has an area of about 60 by 20 feet The unit consists of an epoxy-sealed concrete floor No floor drains are present All waste is stored in drums and double stacked at this unit The unit is used about twice per year during the cleanout of all Drum Accumulation Areas (SWMU 4) Drums from SWMU 4 are stored less than 90-days at this unit prior to

	off-site shipment for recycling or storage in SWMUs 2 through 5 or 7
Date of Startup	This unit began operation in about 1992
Date of Closure	This unit is active
Wastes Managed	This unit has always managed baghouse dust, lead dross, lead debris and floor sweepings, and clean water treatment sludge, and WWTP filter cake
Release Controls	This unit's only release control is an epoxy-sealed concrete floor
History of Documented Releases	No releases from this unit have been documented
Observations	During the VSI, the unit contained about 200 55-gallon drums of lead bearing wastes including baghouse dust, lead dross, lead debris and floor sweepings, clean water treatment sludge, and WWTP filter cake The drums in this unit were not labeled by the facility No cracks or stains were visible on the concrete floor PRC noted no evidence of release (see Photograph No 3)
SWMU 7	**Lead Scrap Trailer Storage Area**
Unit Description	The unit is located outdoors and aboveground The unit is an enclosed semi trailer, which has a 40 by 10 feet dimension The unit is stored next to the northeast truck dock Drums of waste are stored in closed containers on wooden pallets inside the trailer An unsealed concrete pad underlies the trailer When the trailer is full of 55-gallon drums, it is transported off site and a new, empty trailer is moved into

	this unit A floor drain is present below the trailer on the concrete pad
Date of Startup	This unit began operation in about 1961
Date of Closure	This unit is active
Wastes Managed	This unit has always managed baghouse dust, lead dross, lead debris and floor sweepings, clean water treatment sludge, and WWTP filter cake
Release Controls	The unit manages waste in closed containers inside a trailer An unsealed concrete pad is located under the trailer
History of Documented Releases	No releases from this unit have been documented
Observations	During the VSI, the unit contained about 24 55 gallon drums of lead dross, lead debris and floor sweepings clean water treatment sludge and WWTP filter cake PRC noted no evidence of release (see Photograph No 7)
SWMU 8	**Former Outside Hazardous Waste Storage Area**
Unit Description	The unit is located outdoors and aboveground The unit was about 20 by 30 feet in area The unit consisted of an unsealed asphalt pad with no secondary containment An unsealed gravel and dirt area is immediately west and adjacent to the former unit This unit was used to store hazardous waste for greater than 90 days in 55-gallon drums
Date of Startup	The unit began operation in about 1980

Date of Closure	This unit is inactive The facility stopped using this unit in October 1993 No RCRA clean closure plan has been submitted for this unit
Wastes Managed	This unit managed waste naphtha solvent (D001), spent carburetor cleaner (F001, D004, D007, and D008), spent acetic acid (D002, D007, and D008), spent COS flux (D002 and D008), and used oil (D008)
Release Controls	The only release control is an unsealed asphalt paved pad
History of Documented Releases	No releases from this unit have been documented
Observations	During the VSI, no wastes were stored at this unit The asphalt pad was stained red No berm or secondary containment surrounded the unit No cracks in the asphalt were observed (see Photograph No 10)
SWMU 9	**Used Oil Storage Area**
Unit Description	The unit is outdoors and aboveground adjacent to the facility s garage The unit consists of two 275-gallon, steel ASTs The unit covers an area of about 6 by 4 feet An unsealed concrete floor underlies the ASTs, and a gravel parking lot is immediately adjacent to this pad
Date of Startup	This unit began operation before 1980 The age of the ASTs is unknown
Date of Closure	This unit is active
Wastes Managed	This unit manages used oil (nonhazardous)

Release Controls	The unit's only release control is an unsealed, unbermed concrete pad
History of Documented Releases	No releases from this unit have been documented
Observations	During the VSI, the unit contained two 275-gallon ASTs, which were partially full The only secondary containment is an unsealed unbermed concrete pad No cracks in the concrete below the unit were observed PRC noted no evidence of release (see Photograph No 15)

4 0 AREAS OF CONCERN

PRC identified three AOCs during the PA/VSI These AOCs are discussed below, their locations are shown in Figure 2

AOC 1 **Former Diesel Underground Storage Tank (UST)**

This steel UST was installed in May 1978 Its capacity was 8,000 gallons (Johnson 1993a and 1993b) The UST was removed by the facility in October 1993 In the process of removing this UST, the facility's UST removal contractor noted that the soil around the UST exhibited visible signs of petroleum contamination The facility indicated that the contamination was the result of overfilling the UST with diesel fuel The tank had been pressure tested once per year after 1988 In October 1993, Johnson notified the State of Illinois Emergency Management Agency (IEMA) of the petroleum contamination present in on-site soils No analytical results are available for the petroleum-contaminated soil No soils were excavated when the UST was removed (see Photograph No 12)

AOC 2 **Former Gasoline UST**

It is unknown when this UST was installed This 550-gallon capacity UST was removed by the facility in May 1988 During the removal of the UST, the facility's UST removal contractor determined that the UST leaked and that the soil was visibly contaminated by gasoline No known analytical data exists to demonstrate the level of contamination present in the soil IEMA was notified of the leak in October 1993 (Johnson 1993a and 1993b) No soils were excavated when the UST was removed (see Photographs No 13 and 14)

AOC 3 **Former Fuel Oil UST**

According to facility representatives, the age and location of this UST is unknown This 8,000-gallon UST was used to store fuel oil The UST was filled with gravel

and abandoned in place by the facility prior to 1987 (Johnson 1993a) No other information on this UST exists in EPA, state or facility files

5 0 CONCLUSIONS AND RECOMMENDATIONS

The PA/VSI identified nine SWMUs and three AOCs at the Johnson facility Background information on the facility s location, operations, waste generating processes and waste management practices, history of documented releases, regulatory history, environmental setting, and receptors is presented in Section 2 0 SWMU-specific information, such as the unit's description, dates of operation, wastes managed, release controls, history of documented releases, and observed condition is presented in Section 3 0 AOCs are discussed in Section 4 0 Following are PRC s conclusions and recommendations for each SWMU and AOC Table 3, located at the end of this section, summarizes the SWMUs and AOCs at the facility and the recommended further actions

SWMU 1 **Hazardous Waste Storage Area**

Conclusions The unit manages spent carburetor cleaner (F001 and D008), spent acetic acid (D002, D007, and D008), spent COS flux (D002, D004, D007, and D008), spent hydrobromic acid and ethylene glycol (D002 and D008), and used oil (nonhazardous) This unit has been used to store hazardous wastes in drums since October 1993 The unit has a low potential for release to groundwater surface water, air, and on-site soils because the unit is indoors, it has a sealed concrete floor, no visible stains were observed during the VSI, and no releases from this unit have been documented

Recommendations PRC recommends no further action for this SWMU at this time

SWMU 2 **Wastewater Treatment Plant (WWTP)**

Conclusions This unit has always managed, in bulk, spent sulfuric acid (D002 and D008), process wastewater (D002 and D008) Prior to 1992, this unit has managed the WWTP sludge and the WWTP filter cake as D008 hazardous wastes The generation of the WWTP sludge (D008) was discontinued by the facility by the end of 1991 Since 1991, the facility has not managed this waste as a RCRA hazardous waste At the time of the VSI, the facility claimed that

lead-bearing wastes sent off site for recycling and returned as lead ingots were not considered RCRA hazardous wastes Johnson could not provide documentation to support this claim This unit is used to treat the process wastewater and sulfuric acid generated from the battery production operations WWTP sludge is generated from this operation and is stored in this unit The unit has a low potential for release to groundwater, surface water, air, and on-site soils because the unit is indoors, it has a sealed concrete floor and concrete masonry walls, all wastewater entering the WWTP is treated and neutralized on site and then discharged to the City of Geneva's sanitary sewer system, and no releases from this unit have been documented

Recommendations PRC recommends no further action for this SWMU at this time

SWMU 3 **Baghouse Dust Collection Systems and Storage Areas**

Conclusions This unit consists of numerous baghouse dust collectors and drums located throughout the facility This unit manages baghouse dust Sealed 30-gallon metal drums are situated directly below each collection system During the VSI, the unit had a documented release to soil The potential for release is high to surface water, air, and on-site soils because the unit areas are outdoors, they are not adequately contained to prevent a release, cracks in the concrete pad beneath one of the areas was visible, and one of the areas had released baghouse dust to adjacent soils The potential for release to groundwater is moderate because only the surface soil was found to have a documented release, the release covers only a small area (less than 25 square feet), and no known releases to groundwater have been documented

Recommendations PRC recommends that the facility take corrective measures to prevent the release of baghouse dust including installing secondary containment, sealing the concrete pads adjacent to the unit areas, removing/remediating contaminated soil, and conducting weekly inspections of each system area

SWMU 4	**Drum Accumulation Areas**
Conclusions	About 75 Drum Accumulation Areas are present at the facility Lead dross and lead debris and sweepings are stored at each unit area The unit has a low potential for release to groundwater, surface water, air, and on-site soils because the unit is indoors, the unit has sealed concrete floors, no floor drains are present, wastes are stored in drums, and no releases from this unit have been documented
Recommendations	PRC recommends no further action for this SWMU at this time
SWMU 5	**Clean Water Treatment System**
Conclusions	This unit is used to treat lead paste wash water generated by the facility's high-speed lead pasting operation During the VSI, the drums of clean water treatment sludge present at the unit were stored open The unit has a low potential for release to groundwater, surface water, air, and on site soils because the unit is indoors, no floor drains are present, it has a sealed concrete floor, it has a 4-inch concrete secondary containment berm surrounding the unit, and no releases from this unit have been documented
Recommendations	PRC recommends that drums containing sludge be stored closed
SWMU 6	**Lead Scrap Storage Area**
Conclusions	This unit is used about twice per year to store baghouse dusts, lead dross, lead debris and floor sweepings, clean water treatment sludge , and WWTP filter cake aggregated from the WWTP (SWMU2), the Baghouse Dust Collection Systems and Storage Areas (SWMU 3), the Drum Accumulation Areas (SWMU 4), and the Clean Water Treatment Area (SWMU 5) This unit has a low potential for release to groundwater, surface water, air, and on-site soils because the unit is indoors, no floor drains are present, it is on a sealed

concrete floor, it is used temporarily about twice per year, it manages waste in closed drums, and no releases from this unit have been documented

Recommendations — PRC recommends no further action for this SWMU at this time

SWMU 7 — **Lead Scrap Trailer Storage Area**

Conclusions — This unit has been used to store 55-gallon drums of waste including baghouse dusts, lead dross, lead debris and floor sweepings, clean water treatment sludge, and WWTP filter cake for less than 90 days The facility has not managed these wastes as a hazardous waste At the time of the VSI, the facility claimed that lead-bearing wastes sent off site for recycling and returned as lead ingots were not considered RCRA hazardous wastes Johnson could not provide documentation to support this claim

Recommendations — PRC recommends no further action for this SWMU at this time

SWMU 8 — **Former Outside Hazardous Waste Storage Area**

Conclusions — Prior to 1992, this unit managed waste naphtha solvent (D001), spent carburetor cleaner (F001, D004, D007, and D008), spent acetic acid (D002 D007, and D008), spent COS flux (D002 and D008), and used oil (D008) This unit was used to store hazardous waste in closed containers on an asphalt pad, which had no secondary containment Additionally, during the VSI a red stain was present on the asphalt pad When active, the unit had a moderate potential for release to groundwater, surface water, air, and on-site soils because the unit was outdoors, it consisted of an unsealed asphalt pad with no secondary containment, an unsealed gravel and dirt area is immediately west and adjacent to the former unit, and a release from this unit was documented

Recommendations — PRC recommends that this unit undergo RCRA closure

SWMU 9	**Used Oil Storage Area**
Conclusions	This unit is used to store used oil (nonhazardous) in two 275-gallon aboveground storage tanks The unit has a moderate potential for release to groundwater, surface water, air, and on-site soils because the unit is outside, the concrete pad is unsealed, no secondary containment exists to contain potential spills, and a gravel parking lot is immediately adjacent to this unit
Recommendations	PRC recommends that the facility construct a secondary containment berm around the unit to contain spills to comply with EPAs 40 Code of Federal Regulations Part 279 and the state of Illinois used oil management standards
AOC 1	**Former Diesel Underground Storage Tank (UST)**
Conclusions	This AOC has a documented release of diesel fuel to on-site soils This UST was installed in May 1978 and removed in October 1993 This AOC has an unknown potential for release to groundwater, surface water, air and on-site soils because the unit was outdoors, below ground, no soils were excavated when the UST was removed, and known releases to on-site soils have occurred, however the extent of diesel fuel contamination is unknown
Recommendations	PRC recommends that the facility sample soils to delineate the current extent of contamination Based on the soil data, the analytical results may warrant the installation of groundwater monitoring wells upgradient and downgradient of the AOC
AOC 2	**Former Gasoline UST**
Conclusions	This AOC had a documented release of gasoline to on-site soils The age of this UST is unknown and was removed in May 1988 This AOC has an unknown potential for release to groundwater, surface water, air, and on site soils because the unit was outdoors, below ground, no soils were excavated

when the UST was removed, and known releases to on-site soils have occurred, however the extent of gasoline contamination is unknown

Recommendations

PRC recommends that the facility sample soils to delineate the current extent of contamination Based on the soil data, the analytical results may warrant the installation of groundwater monitoring wells upgradient and downgradient of the AOC

AOC 3

Former Fuel Oil UST

Conclusions

The location of this AOC is unknown The AOC was abandoned in place and filled in with gravel prior to 1987 No other information about this AOC exists in EPA, state, or facility files This AOC has an unknown potential for release to groundwater, surface water, air, and on-site soils because the AOC was outdoors and below ground, the AOC was not removed and was filled in with gravel, the level of contamination is unknown, and the location of the AOC is unknown

Recommendations

PRC recommends that the facility determine the location of this AOC and collect on site soil samples to determine if a release has occurred If soil contamination is detected, groundwater sampling may be warranted

TABLE 3

SWMU AND AOC SUMMARY

SWMU		Dates of Operation	Evidence of Release	Recommended Further Action
1	Hazardous Waste Storage Area	October 1993 to present	None	No further action
2	WWTP	1977 to present	None	Characterize wastes sent off site for reclamation
3	Baghouse Dust Collection Systems and Storage Areas	About 1961 to present	Yes	Prevent further releases of baghouse dust by installing secondary containment, seal the concrete pads, remove/remediate soil contaminated with dust, conduct weekly inspections, and characterize waste currently sent off site for reclamation
4	Drum Accumulation Areas	About 1980 to present	None	Characterize wastes currently sent off site for reclamation
5	Clean Water Treatment System	About 1980 to present	None	Store sludge in closed drums and characterize wastes currently sent off site for reclamation
6	Lead Scrap Storage Area	About 1992 to present	None	Characterize wastes currently sent off site for reclamation
7	Lead Scrap Trailer Storage Area	About 1961 to present	None	Characterize wastes currently sent off site for reclamation

TABLE 3 (continued)

SWMU AND AOC SUMMARY

SWMU		Dates of Operation	Evidence of Release	Recommended Further Action
8	Former Outside Hazardous Waste Storage Area	About 1980 to October 1993	Yes	Have this unit undergo RCRA closure
9	Used Oil Storage Area	Before 1980 to present	None	Construct a secondary containment berm around the unit

AOC		Dates of Operation	Evidence of Release	Recommended Further Action
1	Former Diesel Underground Storage Tank (UST)	May 1978 to October 1993	Yes	Sample soils to delineate the extent of contamination Based on soil data, the analytical results may warrant the installation of groundwater monitoring wells upgradient and downgradient of the AOC
2	Former Gasoline UST	Unknown to May 1988	Yes	Sample soils to delineate the extent of contamination Based on soil data, the analytical results may warrant the installation of groundwater monitoring wells upgradient and downgradient of the AOC

TABLE 3 (continued)

SWMU AND AOC SUMMARY

	AOC	Dates of Operation	Evidence of Release	Recommended Further Action
3	Former Fuel Oil UST	Unknown to before 1987	Unknown	Determine the location of the AOC and collect soil samples to determine if a release has occurred If soil contamination is detected, groundwater sampling may be warranted

REFERENCES

Baxter and Woodman, Inc (Baxter and Woodman) 1993 Letter Regarding Johnson Controls, Inc Hazardous Waste Management Facility Closure Plan From Carl H Moon and Steven G Zehner, Environmental Engineers To Lawrence Eastep, Manager, Illinois Environmental Protection Agency (IEPA) November 16

Federal Emergency Management Agency (FEMA) 1981 Flood Plain Insurance Map City of Geneva, Illinois, Kane County Community-Panel No 17030250 002B, Panel 2 of 3 August 3

IEPA 1982 Letter Regarding IEPA Hazardous Waste Inspection Conducted on February 2 1982 From Kenneth P Bechely, Northern Region Manager To Brad Fearnley, Manager, Johnson Controls, Inc , Globe Battery Division (Johnson Controls) March 8

IEPA 1988 Inspection Report of Johnson Controls Battery Group, Inc (Johnson) March 30

IEPA 1991 Letter Regarding Johnson's Request For Withdrawal of the RCRA Part A Permit Application From Lawrence W Eastep, Manager To J R Meverden, Johnson July 1

IEPA 1992a Memorandum Regarding Inspection of the Johnson Facility From Martin Tippin IEPA Inspector To Sy Levine, IEPA February 5

IEPA 1992b Wastewater Pretreatment System with Sludge Press Addition Permit For Johnson Controls Battery Group, Inc Permit Number 1990-EN-4863-2 February 28

Illinois State Geological Survey (ISGS) 1966 *Bedrock Aquifers of Northeastern Illinois* Circular 406

Johnson Controls 1980a Notification of Hazardous Waste Activity July 28

Johnson Controls 1980b RCRA Part A Permit Application November 19

Johnson Controls 1981 Notification of Hazardous Waste Site June 8

Johnson 1993a Letter Regarding Notification Form For underground storage tanks (USTs) at the Johnson Facility From Patrick J Talano, Process Engineer To Office of the Illinois State Fire Marshall, Division of Petroleum and Chemical Safety December 7

Johnson 1993b Letter Regarding Eligibility and Deductibility Application for Johnson's USTs From Patrick J Talano, Process Engineer To Office of the Illinois State Fire Marshall, Eligibility and Deductible Determinations Section December 7

Johnson 1994 Memorandum Regarding Johnson's 1992 Hazardous Waste Report, Baghouse Locations, and the Recyclable Wastes Generated From Patrick Talano, Process Engineer To Kurt Whitman, Environmental Scientist, PRC Environmental Management, Inc (PRC) February 1

National Wetlands Inventory 1984 Geneva, Illinois, Quadrangle

PRC 1993 Interview Regarding Municipal Wells Between Tom Girman, Environmental Scientist and Randy Miller, Assistant Superintendent Water and Sewer, City of Geneva May 12

Rand McNally and Company 1993 *Road Atlas-United States, Canada, and Mexico* 69th Edition

U S Department of Agriculture (USDA) 1979 "Soil Survey of Kane County, Illinois April

U S Department of Commerce (USDOC) 1963 *Rainfall Frequency Atlas of the United States* Technical Paper No 40

USDOC 1968 *Climatic Atlas of the United States*

U S Geological Survey (USGS) 1978 7 5 Minute Series Topographic Map, Aurora North, Illinois Quadrangle

USGS 1980 7 5 Minute Series Topographic Map, Geneva, Illinois Quadrangle

USGS 1985 "Geology, Hydrology, and Water Quality of the Cambrian and Ordovician Systems in Northern Illinois "

Visocky, Adrian P , Marvin G Sherill, and Keros Cartwright 1985 "Geology, Hydrology, and Water Quality of the Cambrian and Ordovician Systems in Northern Illinois " Illinois State Geological Survey, Cooperative Groundwater Report 10

Waller, Dorothy and Ellis Sanderson 1978 "Public Groundwater Supplies in Kane County Illinois State Water Survey Bulletin 60-22

APPENDIX A

VISUAL SITE INSPECTION SUMMARY AND PHOTOGRAPHS

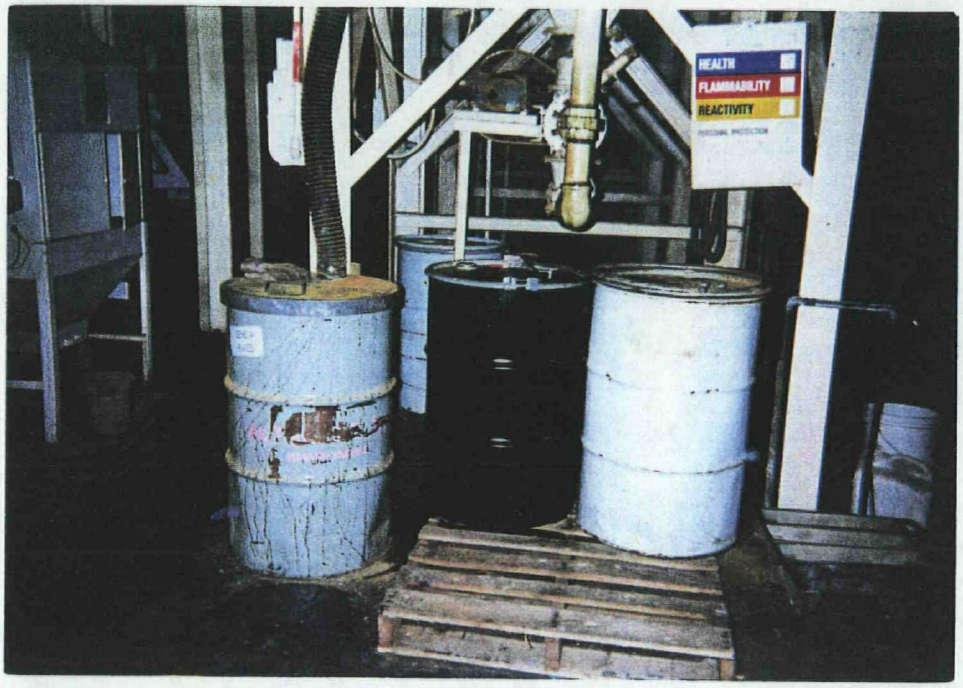
(Ten Pages)

VISUAL SITE INSPECTION SUMMARY

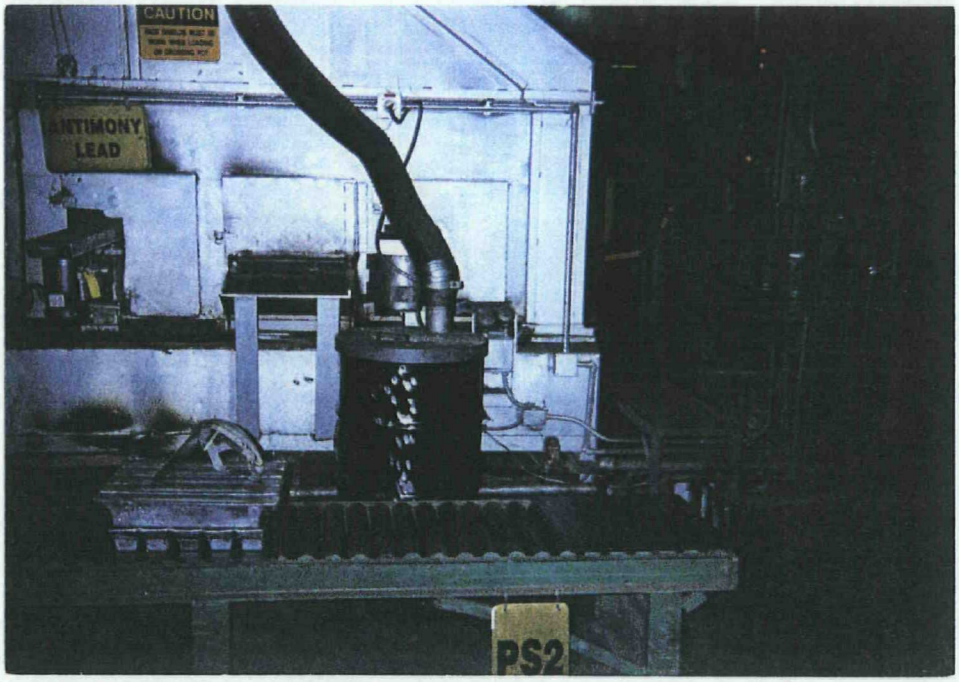
Johnson Controls, Inc , Battery Group
300 South Glengarry Drive
Geneva, Illinois
ILD 980 502 470

Date	December 17, 1993
Primary Facility Representative	Patrick Talano, Process Engineer
Representative Telephone No	(708) 232-4270
Additional Facility Representatives	Bradley M Fearnley, Manager, Engineering Jordan Harwood, Manager, Environmental Control
Inspection Team	Kurt Whitman, PRC Environmental Management, Inc (PRC) Keith Foszcz, PRC
Photographer	Kurt Whitman, PRC
Weather Conditions	Overcast, heavy fog and rain, temperature about 35 °F
Summary of Activities	The visual site inspection (VSI) began at 9 00 a m with an introductory meeting The inspection team explained the purpose of the VSI and the agenda for the visit Facility representatives then discussed the facility's past and current operations, solid wastes generated, and release history Facility representatives provided the inspection team with copies of requested documents The VSI tour began at 10 25 a m PRC visited all areas, SWMUs, and operations within the facility PRC inspected the following areas (1) the Hazardous Waste Storage Area (SWMU 1), (2) the Wastewater Treatment Plant (WWTP) (SWMU 2) (3) the Baghouse Dust Collection Systems and Storage Areas (SWMU 3), (4) the Drum Accumulation Areas (SWMU 4), (5) the Clean Water Treatment System (SWMU 5), (6) the Lead Scrap Storage Area (SWMU 6), (7) the Lead Scrap Trailer Storage Area (SWMU 7), (8) the Former Outside Hazardous Waste Storage Area (SWMU 8), (9) the Used Oil Storage Area (SWMU 9), (10) the Former Diesel Underground Storage Tank (UST) (AOC 1), (11) the Former Gasoline UST (AOC 2), and the Former Fuel Oil UST (AOC 3)

The tour concluded at 12 17 p m , after which the inspection team held an exit meeting with facility representatives The VSI was completed and the inspection team left the facility at 12 28 p m



Photograph No. 1 Location: SWMU 4
Orientation: North Date: December 17, 1993
Description: This is a photograph of a Drum Accumulation Area.

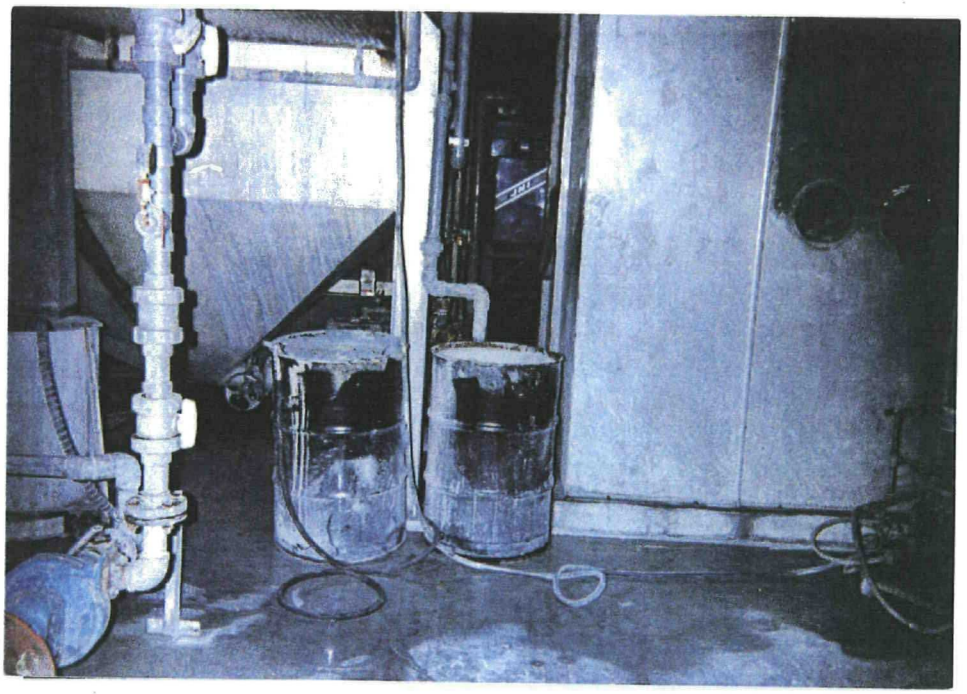


Photograph No. 2 Location: SWMU 4
Orientation: North Date: December 17, 1993
Description: This is a photograph of a Drum Accumulation Area.

Photograph No. 3 Location: SWMU 6
Orientation: Northwest Date: December 17, 1993
Description: This is a photograph of the Lead Scrap Storage Area.

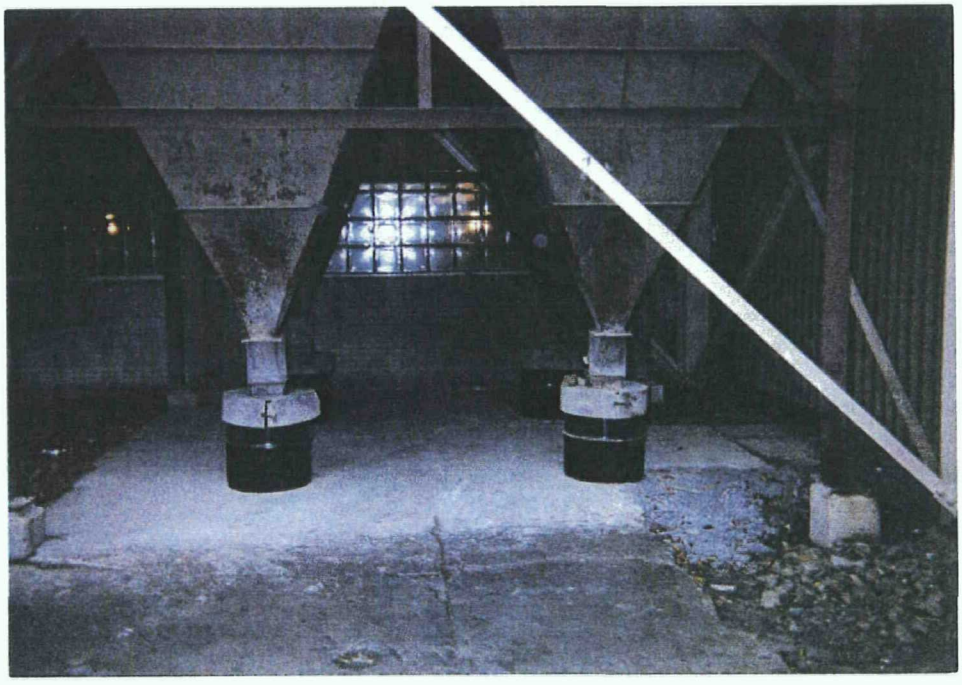
Photograph No. 4 Location: SWMU 1
Orientation: Southwest Date: December 17, 1993
Description: This is a photograph of the Hazardous Waste Storage Area.

Photograph No. 5 Location: SWMU 4
Orientation: North Date: December 17, 1993
Description: This is a photograph of a Drum Accumulation Area.



Photograph No. 6 Location: SWMU 5
Orientation: North Date: December 17, 1993
Description: This is a photograph of the Clean Water Treatment System and two drums stored within this unit.

Photograph No. 7 Location: SWMU 7
Orientation: North-Northeast Date: December 17, 1993
Description: This is a photograph of the Lead Scrap Trailer Storage Area.



Photograph No. 8 Location: SWMU 3
Orientation: South Date: December 17, 1993
Description: This is a photograph of a Baghouse Dust Collection System and Storage Area.

Photograph No. 9 Location: 100 feet east of SWMU 8
Orientation: Southwest Date: December 17, 1993
Description: This is a photograph of an area used to store empty 55-gallon drums.

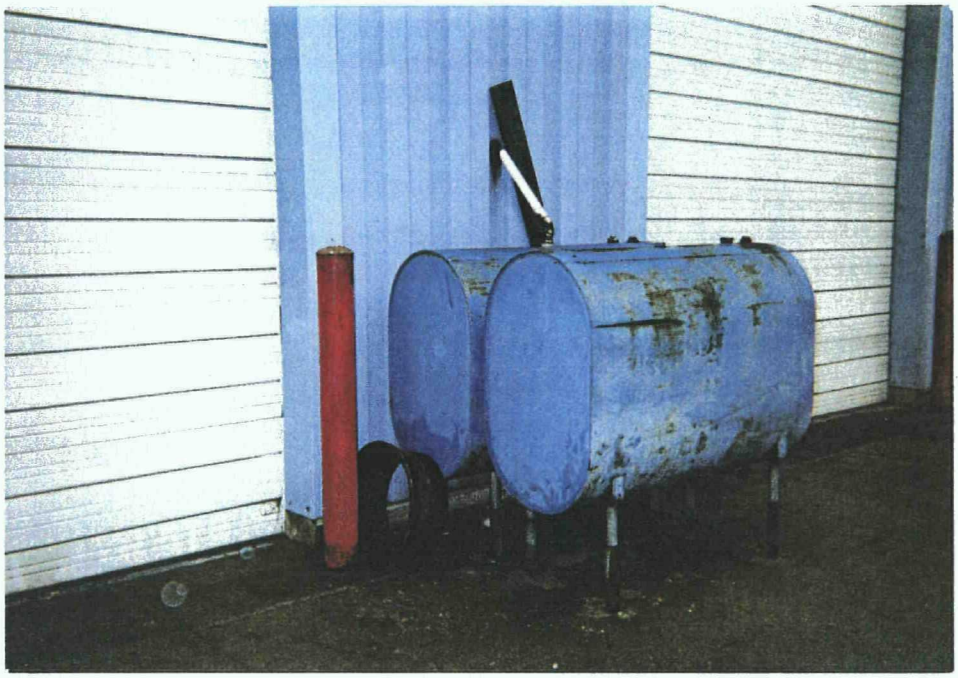
Photograph No. 10 Location: SWMU 8
Orientation: West-Southwest Date: December 17, 1993
Description: This is a photograph of the Former Outside Hazardous Waste Storage Area.

Photograph No. 13 Location: AOC 2
Orientation: Northwest Date: December 17, 1993
Description: This is a photograph of the former location of the Former Gasoline UST.

Photograph No. 14 Location: AOC 2
Orientation: Northwest Date: December 17, 1993
Description: This is a photograph of the former location of the Former Gasoline UST.

Photograph No. 11 Location: SWMU 2
Orientation: South-Southwest Date: December 17, 1993
Description: This is a photograph of the Wastewater Treatment Plant.

Photograph No. 12 Location: AOC 1
Orientation: South-Southwest Date: December 17, 1993
Description: This is a photograph of the former location of the Former Diesel Underground Storage Tank (UST).



Photograph No. 15 Location: SWMU 9
Orientation: Southwest Date: December 17, 1993
Description: This is a photograph of the Used Oil Storage Area.

APPENDIX B

VISUAL SITE INSPECTION FIELD NOTES

(Eighteen Sheets)

All acid is recycled or it goes thru the WWTP operation.
Some of the batteries go thru a "Crack & Dump" where the acid is dumped out.

0930 hrs. No wastestream are produced from the PbO production are recycled. The lead paste that used is recycled thru an off site smelter.
Unused grids are sent off-site for reclamation (no paste).
Floor sweepings & baghouse dust & WWTP & PPE all goes to the smelter. All waste is sent to 1 of 3 smelters
Doe Run Inc. - Boss, MO
Golden Smelting - Eagan, MN
RSR Inc. - Indianapolis, IN

KEW 12/17/43

Hydrobromic acid aq. solution is sent off site to the smelters or to Clean Harbors, Inc.
HBr is used in etching of strips. It is called a COS Flux
25 gallons/week is generated.
All leaded waste generate about 5 drums of WWTP/week.
About 100 drums of leaded waste are generated plus 20 drums per month of lead dross.
Lead dross come from strip & grid casting & COS. Dross is the skimmings (oxidation product) from the top of the melting pot. Some lead refractory lining waste is generated. Come from rebuilding the pots (non asbestos)
160 drums of waste/week are sent

KEW 12/17/43

to the Smelter. All recycled
leaded waste is sent to smelters
and purchased back. All plastic
is sent to smelters All poly
plastic is sent to another Johnson
plant for production of casings.
Have a lab facility for QC
Surface water flows southward
Very few inspections by IDEA for
waste section
0458 No NPDES Permit.
All discharge to city of Geneva
Start date was 1961
Globe Union started operation
of facility Johnson bought
Globe Union.
In 1990 Johnson incorporated
the facility & formed a wholly-
owned subsidiary and is now

KEW 12/17/93

called Johnson Controls Battery
Group, Inc. L 12/31/93.)
Others: Controls
AIA. System
Plastic Tech
Battery Group
One air permit
No known air violations or
complaints from residents.
Number of employees is 340
with 3 shifts.
Total acres is 16.5.
Facility is fenced all the
way around. Locked doors
& Security guard & fencing.
Acid is received in 5,000 gallon
bulk storage Stored in
ABT. 30% to 50% H2SO4 solution
is brought in bulk & stored in ABT.

KEW 12/17/93

Flux epoxy received in drum.
From the maintenance shop plug gaskets.
Used oil. Not sure who picks up oil
Facility has parts washer
containing mineral spirits. One
on site. Managed by Safety
Klean.
Former DEA is a concrete
pad. No other release controls.
Only MT drums stored at
this location. No waste was
stored here. MT drums (clean)
only
Recyclable by-product

Two years process & sanitary were
by passed. Process wastewater
is rinsewater + blowdown from
[illegible] washer + overflow from

KEW 12/17/93

Cooling tower & makeup water.
15,000 gallons per day.
Neutralization, flocculation, coagulation
& sedimentation & filter press for
sludge. Lamella clarifier
Use Ferrous Sulfate & polymer
40' x 50'. Built in 1977.
1015 hrs Discussed history of spills
All floor drains go to the WWTP.
1022 hrs End discussion of
process wastes.
1027 hrs 10,500 bottles/
day are produced.
Scrap bottles are recycled
on site & off site
1031 hrs Parts Washer in
maintenance shop. Concrete
floor, epoxy sealed. No
ventilation. No sign of spills
or staining. All mineral spirits used

KEW 12/17/93

is mixed with used oils &
goes to Clean Harbors 10 gallons
per year
1038 hrs Photograph 1 (north?)
photo of lead dross storage area
from melting pot operation?
Concrete floor - epoxy, no visible
spills or cracks in concrete
floor sweepings being ~~_~~ -
2 drums of lead dross here
smaller baghouse are built into
production. The lead to
large area outside by
melting operation
1043 hrs Photograph 2 (north) of
1 hopper of lead dross from
grid casting
Lead contains antimony
(1.75 % antimony) & cadmium
KEW 12/17/93

alloy based lead Floor drains
present - No sign of
spills except around the
drum of lead dross - Swept
up daily. Epoxy lined
concrete floor fill
~~parts greases~~.
1048 hrs Photograph 3 (northwest)
photo of lead scrap
About 200 55-gal drums
are temporarily stored here.
Stored here a couple of times
per year.
1050 hrs Photograph 4 (southwest)
of Hazardous waste Drum Storage Area
3 drums solder and lead (D00-, D007, D008)
1 drum flux (COS) (D002
D004, D007, D008)
KEW 12/17/93 1 drum paint related (spray cleaner)

1 drum methylene chloride (F001 & D008) 30 gal DF
& 1 drum HBR solution & ethylene glycol
No visible spills in concrete
No cracks in epoxy lined concrete, No fires suppression
Drums are stacked on secondary containment pads (used for leaks)
1057 hrs Photograph 5 (north)
Photo of the 1 Porcelain (wet scrubber) from the ventilation of 2 mixer operations. Orange dust present on the floor. Concrete epoxy lined floor. Spillage present! No cracks in the concrete. This immediately north of the Inside Haz. Waste Storage Area KEW 12/17/93

Porcelain stored in early 1980's.
DSA was stored in October 1993. Waste was previously stored outside
1103 hrs. Photograph 6 (north)
Photo of Clearwater system – Removes lead paste from high speed pasting operation. Pumped from sump system which collects paste & is pumped here. Use filter press, from here water is reused / recycled. Sludge goes to smelter. Sewer from other WWTP operation
KEW 12/17/93

1109 hrs Photograph 7 (north-northeast) Photo of lead scrap stored on 40' trailer which go to smelter. On truck dock, Floor drain below truck dock. Goes to storm sewer. Haz waste are loaded here at truck dock

1112 hrs Photograph 8 (south) Photo of baghouse #5 Cracks in concrete. Baghouse dust on open area (soil) next to baghouse collection area Concrete is not epoxy lined. Visible baghouse dust present (gray color) See Photo 8

KEW 12/11/93

Photograph 9 (southwest) Photo of Former DSA only used to store empty drums Empty plan gravel, soil, no berm or concrete No grass line. No berm Outside recyclable materials was stored here - No visible stains here. No haz waste stored here. Not a swmu

Photograph 10 (west - southwest) Photo of the former Haz Waste DSA Asphalt 1 1/2' pad. Few stain on asphalt. No cracks No berm. Soil (unpaved) abutts this area

Area that abutts the Haz Waste Area is clean, no sign of release is evident.

KEW 12/11/93

1128 hrs. AST 5,000 gallon tank used to store WWTP sludge (2008). Called a dewatering / holding tank for the sludge. Held material over 90 days several times sent to Envirite in Harvey

1130 hrs Photograph 10 (South-Southwest) Photo of Former WWTP building tank area which stored WWTP sludge (2008). Staining present. No cracks in concrete. No epoxy lining. No fire suppression present. Open trough to lead to WWTP water collector. In background 03 filter press & WWTP sludge collection drum KEW about Annual generation was 450 5000

KEW 11/17/13

gallons per every 45 days. Current WWTP sludge is reclaimed by smelters. Minimal lead content is less than 10%

1140 hrs Soda Ash waste is mixed with the leaded trash & floor sweepings

1146 hrs Brad Barnsley leaves

1147 hrs Data QC lab Conducts acetic acid. Fire lb testing of button pot on lead is done here. No waste stored except in quantities of less than 1 gallon & is usually moved to the Haz waste storage area each day.

1153 hrs. Went to Wall Warehouse Blowers area, & bad battery area KEW bad batteries are repaired here

12/17/13

1153 hrs Photograph 11L (view SW) photo of 2 USTs areas 8,500 gallons & 550 gallon gas tanks

1150 hrs. Photographs 13 & 14L (SW) of former 550 gallon UST containing gas. No closure yet. Visible signs of petroleum product found. Location of 3rd UST is unknown. When plant expansion was done it was removed. Filled in place w/ gravel prior to 1987. 8,000 gallon UST was removed

1204 hrs Maintenance garage Used Oil picked up by Texamo, Inc. 2-75 gallons tank of used oil

KEW 12/17/03

are stored phone #708/366.0440 Parts cleaner product. Texamo, Inc may pick this up Monthly generated is 150 gallons every 2 to 3 months

1208 hrs Photograph 15 (SW) Photo of 2-275 gallon used oil tanks, Concrete pad, No containment or berm. No stains, cracks in concrete. Vent pipe in tip.

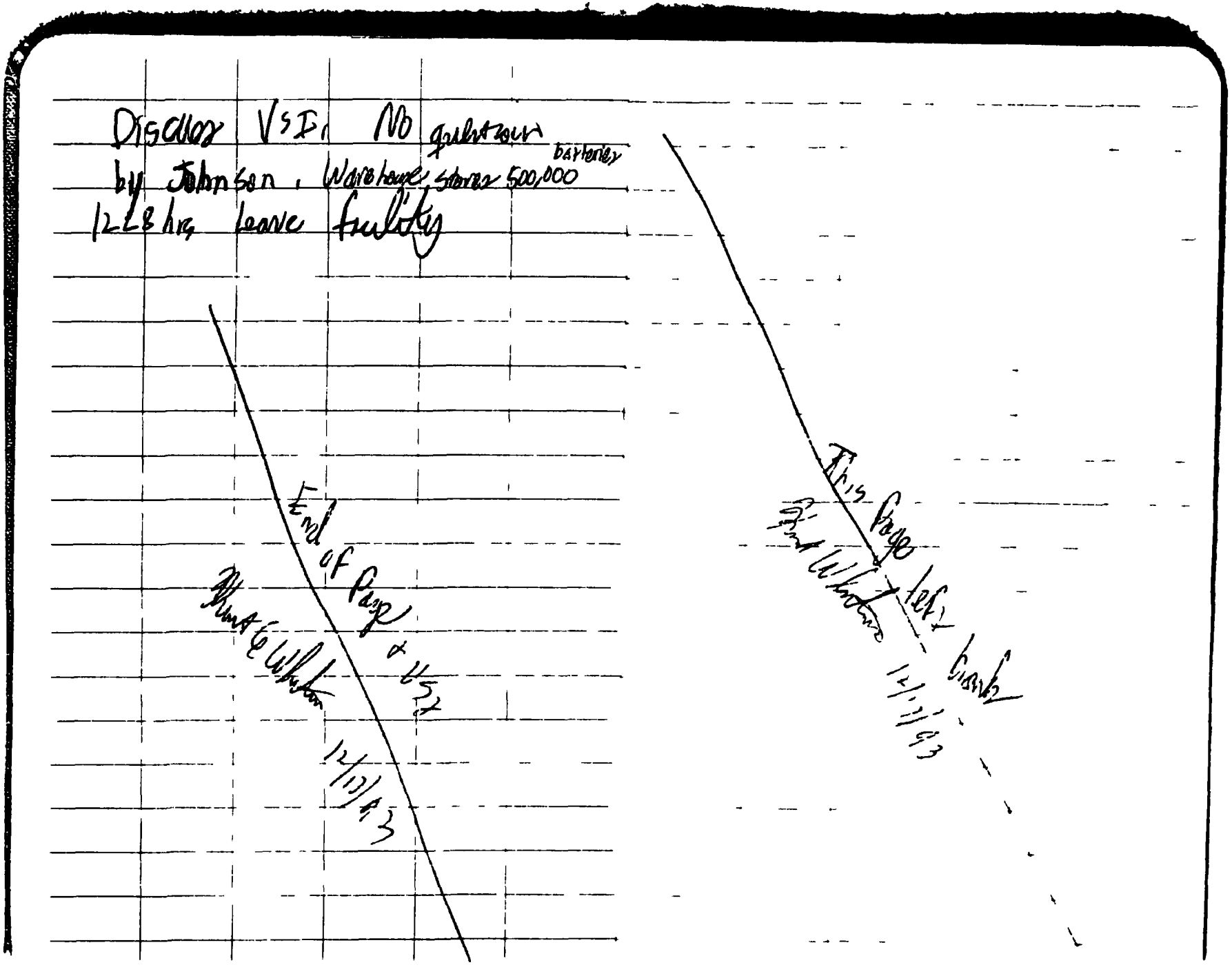
Transporter is Parish Carriers, Inc. 1-800-486-3885

Age of used oil tanks - age is unknown. Average number per working days is 9500 x 250 days = 2,375,000 per year

1217 hrs. END VSI - Return to conference Room. ~~About 10,000 to~~ 9500 ~~bricks are~~ produced each day. KEW

KEW 12/17/03

Display VSI, No guitar sold
by Johnson, Warehouse stores 500,000 batteries
12 28 hrs leave friday



Field Logbook No _____ Date 12/7/93

Project No. _____

Project Name Johnson Controls, Inc.

940 Boundary Facilities
- RR - South
- Marshy Area directly east ~~east to Northeast~~ of
- E & T Glass and Neon, Vacant lot, Allied Tubular Rivet, Inc. - North, on Commerce Drive
- Miner Enterprises, Inc.; Northeast on 38
- South of Tracts - Landfill, Kane County Events Center

Glen Garry Dr

84

Field Logbook No _____ Date 12/7/93

Project No _____

Project Name Johnson Controls, Inc.

955 Arrive on site
Johnson Controls
ILD 98 52 = 47c
Jordan S Harwood
Pat Talana
Bradley M. Fearnley

PBC:
Kurt Whitman
Keith Faszcz

Weather - overcast, ~35°F, rain, heavy fog

Kurt Explains purpose of VSI

Facility ~250,000 ft²

85

Field Logbook No _____ Date 12/17/93

Project No _____

Project Name Johnson Control, Inc.

UST Removed Oct 93
8,000 gal diesel fuel,
steel, past leak
test in prior year,
installed in 1978.
Contaminated soil found
under the pump.
visible cont

had 3 USTs, all gone
now.

Lead Content
2000 lb hogs
60 lb pigs

Field Logbook No _____ Date 12/17/93

Project No. _____

Project Name JCI

discuss schematic given.

wastes
dropped paste
unusable grids - smelters
floor sweepings
bag house dust } go to smelter
pipe
sludge
lead dross

Doe Run Boss, Mo. or
Gutter smelting co
RSR in Indiana

COS flux - aqueous hydrobromic
solution Clean Harbors, KY
used for cleaning/etching
straps before welding
1 to 2 drums per mo.
acetic acid

Field Logbook No _____ Date 12/17/93

Project No. _____

Project Name JCI

~~leaded waste~~ 5 drums/wk
WW treatment sludge
leaded waste -
160 drums of waste go
to smelter per week

All other supplies are
~~purchased~~, poly comes
prepared, acids etc

operations only include
lead melt, and lead
oxide production

Began operation in 1961
-- 81 Johnson bought
Globe

KH

Field Logbook No _____ Date 12/17/93

Project No _____

Project Name JCI

Four groups of Johnson Control Inc
Controls
Automobile Systems
Battery
Plastec Technology

Air Permits -
no odor complaints or
violations

employees - 340, 3 shift
5 days/wk

Completely fenced,
security guards, cameras

16.5 acres.

KH

Field Logbook No. _____ Date 12/17/93

Project No _____

Project Name JCI

acid received in bulk
NaOH - bulk 20% sol
Epoxy - 55 gal
Flux - "

used oil

Parts washer - one in
maintenance shop by
SK

Former drum Storage Area
- concrete slab

WWT -
all plant process ww,
rinse water, blowdown
from washing machines,

Field Logbook No _____ Date 12/17/93

Project No _____

Project Name JCI

overflow from cooling towers,
45,000 gal/day,
neutralize, floc, coag-
ulation, sedimentation
filter press for sludge
size
40' by 50' built in 1977

No recollection of spills
or releases

All floor drains go to
WWT

Separate storm water sewer
for roof drains

Field Logbook No _____ Date 12/17/93

Project No _____

Project Name JCI

1025 Tour
lead storage
plastic

maintence -
petroleum based solvent
manage in sltc,
10 gal/yr

Photo 1 Dross SAA
North

3 baghouses out side,
& roof systems go to
outside systems

Field Logbook No _____ Date 12/17/93

Project No. _____

Project Name JCI

Photo 2 North - dross hopper
grid casting systems
6 in facility

Drum storage area
Photo 3 NW
200 drums, "frasco"
drums in good condition

Photo 4 - SW - Haz W.
8 55 gal drum - D008
2 - 15 gal drums ~~F001, F004~~ D008

→ melt, lead - F001, D008 11/15/93
→ Flux - D002, D004, D007
D008 12/3/93

started in Oct 93 as HW
storage area

Field Logbook No _____ Date 12/17/93

Project No _____

Project Name JCI

North Photo 5
Rotocone -
drum on concrete
in operation, dust on
floor, 15 years old.

photo 6 North
Recovery system for paste
6" high containment, clean,
sump, drum filter -
removes solids deposits
into a drum for smelter.
water from ~~sludge~~ filter press
gets reused as wash
all paste from operations go
into a sump and delivered
to the above area, and
pumped into the tanks shown.

KM 94

Field Logbook No _____ Date 12/17/93

Project No _____

Project Name JCI

photo 7 North - trailer
drums that go to smelter,
deck has sump that
gets pumped into the
drum ~~can~~

photo 8 South
Brighton #5,
full drums go down to
trailer, concrete kept
clean material packed
on soil around concrete,
cracked.

photo 9 South East,
ESA, stored on pallets
concrete cracked, 1960-?

95 KM

Field Logbook No _____ Date 12/17/93

Project No _____

Project Name JCI

photo 10 west
Hazwaste storage area,
asphalt area,
1991 one year only

Settlers Hill Landfill -
closed - Clean Waste

Residence - immediate
West

WWT plant
fiberglass tanks, sumps
troughs lead back to main
collection area, floor clean/
dry
5,000 gallon sludge tank
IEPA visit RE JCI to RCRA

RJF 96

Field Logbook No _____ Date 12/17/93

Project No _____

Project Name JCI

close
photo 11 South, former
5,000 gal tank, and
sludge press, 2 drums
go directly to trailer
for smelter,
previous sludge (2008) to Envirite,
5,000 gal/45 days,

8 - fiberglass tanks of acid
3500 gal

QC laboratory
free lead tests in
barton melt pot
acetic acid waste brought
to Storage area in small
containers and transfered into

97 RJF

Field Logbook No _____ Date 12/17/93

Project No _____

Project Name JCI

photo 12 south - Former
UST 8,000

photo 13, 14 Northwest, former
UST 550+ vent pipe

3rd UST location not found,
prior to 1982 filled w/ gravel - 8,000 gal

Used oil -
Texoma pick up oil
708 366 0440
2 - 75 gal tanker
150 gals / 2-3 months

Field Logbook No _____ Date 12/17/93

Project No _____

Project Name JCI

photo 15 northwest
2 - 75 gal tanks, used
oil, std., concrete
stained

transporter of lead
waste
Parish Carriers
800 / 486-3885
[Sharon]

2,5 million batteries / year

1:15 End Tour,
hold exit meeting

Exit Facility 1235

Field Logbook No _____ Date 12/12/93

Project No _____

Project Name JCI

photo 12 south - Former
UST 8,000

photo 13, 14 Northwest, former
UST 550+ vent pipe

3rd UST location not found,
presumed filled in place
w/ gravel - 8,000 gal

Used oil -
Texoma pick up oil
748 366 0440
2 - 75 gal tanks
150 gals / 2-3 months

KH

Field Logbook No _____ Date 12/12/93

Project No _____

Project Name JCI

photo 15 southwest
2-75 gal tanks, used
oil, steel, concrete
stained

transporter of lead
waste
Parish Carnes
800 / 486-3885
[Sharon]

2.5 million batteries/year

1:15 End Tour
Hold ~~exit~~ exit meeting

Exit Facility 1235

KH